

MEDICARE COVERAGE OF LABORATORY TESTING

Please remember when ordering laboratory tests that are billed to Medicare/Medicaid or other federally funded programs, the following requirements apply:

1. Only tests that are medically necessary for the diagnosis or treatment of the patient should be ordered. Medicare does not pay for screening tests except for certain specifically approved procedures and may not pay for non-FDA approved tests or those tests considered experimental.
2. If there is reason to believe that Medicare will not pay for a test, the patient should be informed. The patient should then sign an Advance Beneficiary Notice (ABN) to indicate that he or she is responsible for the cost of the test if Medicare denies payment.
3. The ordering physician must provide an ICD-10 diagnosis code or narrative description, if required by the fiscal intermediary or carrier.
4. Organ- or disease-related panels should be billed only when all components of the panel are medically necessary.
5. Both ARUP- and client-customized panels should be billed to Medicare only when every component of the customized panel is medically necessary.
6. Medicare National Limitation Amounts for CPT codes are available through the Centers for Medicare & Medicaid Services (CMS) or its intermediaries. Medicaid reimbursement will be equal to or less than the amount of Medicare reimbursement.

The CPT Code(s) for test(s) profiled in this bulletin are for informational purposes only. The codes reflect our interpretation of CPT coding requirements, based upon AMA guidelines published annually. CPT codes are provided only as guidance to assist you in billing. ARUP strongly recommends that clients reconfirm CPT code information with their local intermediary or carrier. CPT coding is the sole responsibility of the billing party.

The regulations described above are only guidelines. Additional procedures may be required by your fiscal intermediary or carrier.

Hotline Page #	Test Number	Summary of Changes by Test Name	Name Change	Methodology	Performed/Reported Schedule	Specimen Requirements	Reference Interval	Interpretive Data	Note	CPT Code	Component Change	Other Interface Change	New Test	Inactive
6	0098974	Angiotensin Converting Enzyme, CSF				x								
7	0093142	Antimicrobial Level - Doxycycline, Serum	x	x										
7	0060211	Antimicrobial Susceptibility – mecA/mecC Genes by PCR	x				x	x						
7	0050080	Anti-Nuclear Antibodies (ANA), IgG by ELISA with Reflex to ANA, IgG by IFA					x	x	x					
8	0050317	Anti-Nuclear Antibodies (ANA), IgG by ELISA with Reflexes to ANA, IgG by IFA and to dsDNA, RNP, Smith, SSA 52, SSA 60, and SSB Antibodies, IgG					x	x	x					

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9	2008467	Anti-Nuclear Antibody (ANA), IgG by IFA with Reflex by IFA Pattern					x		x					
10	2011478	Arsenic, Random Urine with Reflex to Fractionated					x							
10	0025000	Arsenic, Urine with Reflex to Fractionated					x							
10	2003150	<i>Aspergillus</i> Galactomannan Antigen by EIA, Bronchoscopy				x								
11	2014314	Autism and Intellectual Disability Comprehensive Panel											x	
12	2014312	Autism and Intellectual Disability Metabolic Panel											x	
13	0025013	Cadmium Exposure Panel - OSHA					x							
13	2011479	Cadmium, Random Urine					x							
13	0025040	Cadmium, Urine					x							
13	0092211	Carbamazepine Epoxide and Total					x							
13	2002064	Chimerism, Post-Transplant, Sorted Cells								x				
14	0060241	<i>Chlamydia trachomatis</i> and <i>Neisseria gonorrhoeae</i> by Transcription-Mediated Amplification (TMA)				x								
14	2011164	<i>Chlamydia trachomatis</i> and <i>Neisseria gonorrhoeae</i> by Transcription-Mediated Amplification (TMA) with Confirmation				x								
14	2013767	<i>Chlamydia trachomatis</i> and <i>Neisseria gonorrhoeae</i> by Transcription-Mediated Amplification (TMA) with Reflex to <i>Chlamydia trachomatis</i> L serovars (LGV) by PCR				x								
15	0060243	<i>Chlamydia trachomatis</i> by Transcription-Mediated Amplification (TMA)				x								
15	0025068	Chromium, Urine					x							
15	2005160	Chymotrypsin, Fecal			x									
47	0050710	Coccidioides Antibodies Panel, CSF by CF, ID, ELISA												x
15	0050588	<i>Coccidioides</i> Antibodies Panel, Serum by CF, ID, ELISA			x	x								
16	0050137	<i>Coccidioides</i> Antibodies, IgG and IgM by ELISA	x		x	x								
16	0050170	<i>Coccidioides</i> Antibody by CF				x		x						
16	0050179	<i>Coccidioides</i> Antibody, IgG by ELISA			x	x								
16	0050178	<i>Coccidioides</i> Antibody, IgM by ELISA			x	x								
17	0050183	<i>Coccidioides immitis</i> Antibodies by Immunodiffusion			x	x								
17	2011480	Copper, Random Urine					x							
17	0020461	Copper, Urine					x					x		

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17	2000624	Cytology, Pap Smear								x				
17	2000134	Cytology, SurePath Liquid-Based Pap Test								x				
17	2000133	Cytology, SurePath Liquid-Based Pap Test and Human Papillomavirus (HPV), High Risk by PCR, SurePath (for routine co-testing in women over 30)								x				
18	2000135	Cytology, SurePath Liquid-Based Pap Test with Reflex to Human Papillomavirus (HPV), High Risk by PCR, SurePath								x				
18	2000137	Cytology, ThinPrep Pap Test								x				
18	2000136	Cytology, ThinPrep Pap Test and Human Papillomavirus (HPV), High Risk by Transcription-Mediated Amplification (TMA) (for routine co-testing in women over 30)	x							x				
18	2000138	Cytology, ThinPrep Pap Test with Reflex to Human Papillomavirus (HPV), High Risk, E6/E7 mRNA by Transcription-Mediated Amplification (TMA)								x				
18	0050165	Cytomegalovirus Antibody, IgG				x								
18	0050553	Cytomegalovirus Antibody, IgM				x								
19	0092516	Drugs of Abuse Panel, Meconium - Screen with Reflex to Confirmation/Quantitation		x		x			x					
19	2011241	Duchenne/Becker Muscular Dystrophy (DMD) Deletion/Duplication with Reflex to Sequencing								x				
19	2005730	Enterovirus and Parechovirus by PCR		x				x						
19	0050249	Enterovirus by PCR		x				x						
19	0050600	Epstein-Barr Virus Antibody Panel I				x								
20	0050602	Epstein-Barr Virus Antibody Panel II				x								
20	0050225	Epstein-Barr Virus Antibody to Early D Antigen (EA-D), IgG				x								
20	0050245	Epstein-Barr Virus Antibody to Nuclear Antigen, IgG				x								
20	0050235	Epstein-Barr Virus Antibody to Viral Capsid Antigen, IgG				x								
20	0051627	Epstein-Barr Virus Antibody to Viral Capsid Antigen, IgG and IgA				x								
21	0050240	Epstein-Barr Virus Antibody to Viral Capsid Antigen, IgM				x								
21	2013694	Explyfy Respiratory Pathogens by Next Generation Sequencing											x	
21	2012155	Charcot-Marie-Tooth (CMT) and Related Hereditary Neuropathies, PMP22 Deletion/Duplication with Reflex to Sequencing Panel								x				

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47	2005400	<i>FLT3</i> Mutation Detection by PCR												x
47	2011806	<i>FLT3</i> Signal Ratio Mutation Detection by PCR												x
22	0050750	Fungal Antibodies by CF, CSF			x	x	x							
22	0050605	Fungal Antibodies by CF, Serum				x								
22	2001771	Glutamic Acid Decarboxylase Antibody						x						
23	2011304	Heavy Metals Panel 3, Random Urine with Reflex to Arsenic Fractionated					x	x				x		
24	0099475	Heavy Metals Panel 3, Urine with Reflex to Arsenic Fractionated					x	x				x		
25	0020572	Heavy Metals Panel 4, Urine with Reflex to Arsenic Fractionated					x	x				x		
26	0025055	Heavy Metals Panel 6, Urine with Reflex to Arsenic Fractionated					x					x		
26	2001567	Hepatitis B Virus Genotype by Sequencing						x						
27	2006898	Hepatitis C Virus High-Resolution Genotype by Sequencing				x		x						
27	0050292	Herpes Simplex Virus Type 1 Glycoprotein G-Specific Antibody, IgG by CIA				x			x					
27	0050294	Herpes Simplex Virus Type 2 Glycoprotein G-Specific Antibody, IgG by CIA				x			x					
27	0060784	Human Metapneumovirus by PCR	x					x						
27	2002899	Human Papillomavirus (HPV), High Risk by in situ Hybridization, Paraffin					x	x						
28	0070265	21-Hydroxylase Antibody		x			x	x						
28	0050202	IA-2 Antibody		x				x						
47	0070125	IGF-1 (Insulin-Like Growth Factor 1)												x
28	2008320	Infliximab and Infliximab-dyyb Activity and Neutralizing Antibody	x			x								
28	2013612	Infliximab and Infliximab-dyyb with Reflex to Antibody	x			x	x							
29	2007469	Influenza A Virus H1/H3 Subtype by PCR	x	x				x		x	x			
29	2008788	Influenza A Virus H1/H3 Subtype by PCR with Reflex to H1N1 (2009) Oseltamivir Resistance by Sequencing	x	x				x			x			
29	0099228	Insulin Antibody		x				x						
30	2007698	Insulin-Like Growth Factor 1(IGF-1) with calculated Z-score											x	
31	2013993	Interstitial Lung Disease Panel					x							
47	0091180	Ipecac Use Markers, Serum or Plasma - Screen with Reflex to Confirmation/Quantitation												x

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47	0091419	Ipecac Use Markers, Urine - Screen with Reflex to Confirmation/Quantitation												X
31	2011482	Lead, Random Urine					X	X				X		
32	0025060	Lead, Urine					X	X				X		
32	2014683	LeukoStrat CDx <i>FLT3</i> Mutation Detection by PCR											X	
32	2013716	LipoFit by NMR (Pricing Change Only)												
32	2013715	LipoFit by NMR, Particle Count Only (Pricing Change Only)												
33	2014699	Maternal T Cell Engraftment in SCID											X	
34	2014704	Maternal T Cell Engraftment in SCID, Maternal Specimen											X	
34	2014694	Maternal T Cell Engraftment in SCID, Pre-Engraftment Specimen											X	
35	0050380	Measles (Rubeola) Antibody, IgG				X			X					
35	0054440	Measles (Rubeola) Antibody, IgG, CSF				X								
35	0098819	Melanocyte Stimulation Hormone, Alpha (a-MSH)			X	X								
35	2011481	Mercury, Random Urine					X							
36	0025050	Mercury, Urine					X					X		
47	0091553	Methane, Whole Blood												X
36	0054442	Mumps Virus Antibody IgG, CSF				X								
36	0050390	Mumps Virus Antibody, IgG				X			X					
37	0060244	<i>Neisseria gonorrhoeae</i> by Transcription-Mediated Amplification (TMA)				X								
38	2014599	Non-Alcoholic Fatty Liver Disease Susceptibility (<i>PNPLA3</i>) Genotyping											X	
47	0040174	<i>NPM1</i> Mutation by PCR and Fragment Analysis												X
39	3000066	<i>NPM1</i> Mutation Detection by RT-PCR, Quantitative											X	
39	0050639	Nuclear Antibody (ANA) by IFA, IgG					X	X	X					
39	2002257	Osmotic Fragility, Erythrocyte				X								
40	0049250	p53 with Interpretation by Immunohistochemistry					X							
40	2006247	Parainfluenza 1-4 by PCR	X					X						
40	2005731	Parechovirus by PCR	X	X				X						
47	0091455	Phenylpropanolamine, Serum or Plasma												X
47	0091454	Phenylpropanolamine, Urine												X
40	0020159	Pseudocholinesterase, Dibucaine Inhibition					X		X		X			
41	3000010	Relapsing Fever <i>Borrelia</i> Species by PCR											X	

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41	0070105	Renin Activity			x									
41	0051298	Rheumatoid Factors, IgA, IgG, and IgM by ELISA		x						x				
41	2008414	ROS1 with Interpretation by Immunohistochemistry with Reflex to FISH if Equivocal or Positive	x						x					
41	0050771	Rubella Antibody, IgG				x								
42	0050551	Rubella Antibody, IgM				x								
42	2006258	Sexually Transmitted Disease Panel 1 by Transcription-Mediated Amplification				x								
42	2013325	Systemic Sclerosis Comprehensive Panel					x							
43	2012057	Systemic Sclerosis Panel					x							
43	2014484	Thiopurine Metabolites by LC-MS/MS								x				
43	2002734	Thyroid Stimulating Hormone Receptor Antibody (TRAb)						x						
43	0099430	Thyroid Stimulating Immunoglobulin		x										
43	0050770	<i>Toxoplasma gondii</i> Antibody, IgG				x								
43	0050557	<i>Toxoplasma gondii</i> Antibody, IgM				x								
44	2014686	Tramadol and Metabolite, Quantitative, Serum or Plasma											x	
47	2002764	Tramadol and Metabolites, Serum or Plasma, Quantitative												x
44	2002736	Tramadol and Metabolite , Urine, Quantitative	x				x	x			x			
47	0050787	Trichinella Antibody, IgG, by ELISA												x
45	2005506	<i>Trichomonas vaginalis</i> by Transcription-Mediated Amplification (TMA)				x								
45	0050167	Varicella-Zoster Virus Antibody, IgG				x			x					
45	0054444	Varicella-Zoster Virus Antibody, IgG, CSF				x								
45	0050229	West Nile Virus by PCR	x	x				x						
45	2006196	Zinc Transporter 8 Antibody						x						
46	0020462	Zinc, Urine					x					x		

[0098974](#)

Angiotensin Converting Enzyme, CSF

ACE CSF

Specimen Required: Collect: CSF.

Specimen Preparation: Separate from cells within 1 hour of collection. Transfer 1 mL CSF to an ARUP Standard Transport Tube. (Min: **0.5** mL)

Storage/Transport Temperature: Frozen.

Unacceptable Conditions: Hemolyzed or xanthochromic specimens.

Stability (collection to initiation of testing): Ambient: 4 hours; Refrigerated: 1 week; Frozen: 6 months

0093142 Antimicrobial Level - **Doxycycline, Serum **DOXY****

Methodology: Quantitative **Gas Chromatography-Mass Spectrometry**

0060211 Antimicrobial Susceptibility – **mecA/mecC Genes by PCR **MA MEC****

Reference Interval: Presence or absence (of *mecA/mecC* genes).

Interpretive Data: Presence of *mecA/mecC* genes indicates resistance to methicillin/oxacillin and most other beta-lactam **antibiotics**.

See Compliance Statement B: www.aruplab.com/CS

0050080 Anti-Nuclear Antibodies (ANA), IgG by ELISA with Reflex to ANA, IgG by IFA **ANA**

Reference Interval:
Effective **November 13, 2017**

Components	Reference Interval
Anti-Nuclear Antibodies (ANA), IgG by ELISA	None Detected
Nuclear Antibody (ANA) by IFA, IgG	Less than 1:80

Interpretive Data: Anti-Nuclear Antibodies (ANA), IgG by ELISA: ANA specimens are screened using enzyme-linked immunosorbent assay (ELISA) methodology. All ELISA results reported as Detected are further tested by indirect fluorescent assay (IFA) using HEp-2 substrate with an IgG-specific conjugate. The ANA ELISA screen is designed to detect antibodies against dsDNA, histone, SS-A (Ro), SS-B (La), Smith, snRNP/Sm, Scl-70, Jo-1, centromere, and an extract of lysed HEp-2 cells. ANA ELISA assays have been reported to have lower sensitivities **than ANA IFA for systemic autoimmune rheumatic diseases (SARD)**.

Negative results do not necessarily rule out SARD.

Note: ANA lacks diagnostic specificity, and is associated with a variety of diseases (cancers, autoimmune, infectious, and inflammatory conditions) and occurs in healthy individuals in varying prevalence. The lack of diagnostic specificity requires a confirmation of positive ANA by more-specific serologic tests, which may be guided by the pattern(s) observed.

If ANA are detected by ELISA, then ANA by IFA titer will be added. Additional charges apply

ANA determined by indirect fluorescence assay (IFA) use HEp-2 substrate and IgG-specific conjugate at a screening dilution of 1:80. If positive, patterns reported include homogeneous, speckled, centromere, nucleolar, nuclear dots, or cytoplasmic. All positive results are reported with endpoint titers.

0050317 **Anti-Nuclear Antibodies (ANA), IgG by ELISA with Reflexes to ANA, IgG by IFA and to dsDNA, RNP, Smith, SSA 52, SSA 60, and SSB Antibodies, IgG** **ANA REF**

Reference Interval:

Test Number	Components	Reference Interval		
0050639	Anti-Nuclear Antibodies (ANA), IgG by ELISA	None Detected		
	Nuclear Antibody (ANA) by IFA, IgG	Effective November 13, 2017 Less than 1:80		
2002693	Double-Stranded DNA (dsDNA) Antibody, IgG by ELISA	None Detected		
	Double-Stranded DNA (dsDNA) Antibody, IgG by IFA (using <i>Crithidia luciliae</i>)	Less than 1:10		
0050470	RNP (U1) (Ribonucleic Protein) (ENA) Antibody, IgG	29 AU/mL or less	Negative	
		30-40 AU/mL	Equivocal	
		41 AU/mL or greater	Positive	
0050085	Smith (ENA) Antibody, IgG	29 AU/mL or less	Negative	
		30-40 AU/mL	Equivocal	
		41 AU/mL or greater	Positive	
2012074	SSA 52 and 60 (Ro) (ENA) Antibodies, IgG	Test Number	Components	Reference Interval
			SSA 52 (Ro) (ENA) Antibody, IgG	29 AU/mL or Less: Negative 30-40 AU/mL: Equivocal 41 AU/mL or greater: Positive
			SSA 60 (Ro) (ENA) Antibody, IgG	29 AU/mL or Less: Negative 30-40 AU/mL: Equivocal 41 AU/mL or greater: Positive
0050692	SSB (La) (ENA) Antibody, IgG	29 AU/mL or less	Negative	
		30-40 AU/mL	Equivocal	
		41 AU/mL or greater	Positive	

Interpretive Data: Anti-Nuclear Antibodies (ANA), IgG by ELISA: ANA specimens are screened using enzyme-linked immunosorbent assay (ELISA) methodology. All ELISA results reported as detected are further tested by indirect fluorescent assay (IFA) using HEp-2 substrate with an IgG-specific conjugate. The ANA ELISA screen is designed to detect antibodies against dsDNA, histone, SS-A (Ro), SS-B (La), Smith, snRNP/Sm, Scl-70, Jo-1, centromere, and an extract of lysed HEp-2 cells. ANA ELISA assays have been reported to have lower sensitivities **than ANA IFA for systemic autoimmune rheumatic diseases (SARD)**.

Negative results do not necessarily rule out SARD.

Note: ANA lacks diagnostic specificity, and is associated with in variety diseases (cancers, autoimmune, infectious, and inflammatory conditions) and occurs in healthy individuals in varying prevalence. The lack of diagnostic specificity requires confirmation of positive ANA by more-specific serologic tests, which may be guided by the pattern(s) observed.

Specimens are screened for ANA using ELISA. If ANA IgG is detected by ELISA, then ANA IgG by IFA (using HEp-2 substrate) will be added. If ANA, IgG by IFA is confirmed positive with a titer of **1:80** or greater, then a titer and pattern will be reported. In addition, samples positive for ANA, IgG by IFA will reflex to Double-Stranded DNA (dsDNA) Antibody, IgG by ELISA, RNP (U1) (Ribonucleic Protein) (ENA) Antibody, IgG, Smith (ENA) Antibody, IgG, SSA 52 and 60 (Ro) (ENA) Antibodies, IgG, and SSB (La) (ENA) Antibody, IgG. If Double-Stranded DNA (dsDNA) Antibody, IgG by ELISA is detected, then Double-Stranded DNA (dsDNA) Antibody, IgG by IFA (using *Crithidia luciliae*) will be added. Additional charges apply.

ANA determined by indirect fluorescence assay (IFA) use HEp-2 substrate and IgG-specific conjugate at a screening dilution of 1:80. If positive, patterns reported include homogeneous, speckled, centromere, nucleolar, nuclear dots, or cytoplasmic. All positive results are reported with endpoint titers.

2008467

Anti-Nuclear Antibody (ANA), IgG by IFA with Reflex by IFA Pattern

ANA R PAT

Reference Interval:

Test Number	Components	Reference Interval																					
0050639	Nuclear Antibody (ANA) by IFA, IgG	Effective November 13, 2017 Less than 1:80																					
2003040	PM/Scl-100 Antibody, IgG by Immunoblot	Negative																					
2012173	Fibrillarin (U3 RNP) Antibody, IgG	Negative																					
0050215	Double-Stranded DNA (dsDNA) Antibody, IgG by ELISA with Reflex to dsDNA Antibody, IgG by IFA	Effective August 20, 2012																					
		<table border="1"> <thead> <tr> <th>Test Number</th> <th>Components</th> <th>Reference Interval</th> </tr> </thead> <tbody> <tr> <td></td> <td>Double-Stranded DNA (dsDNA) Antibody, IgG by ELISA</td> <td>None Detected.</td> </tr> <tr> <td>2002693</td> <td>Double-Stranded DNA (dsDNA) Antibody, IgG by IFA (using <i>Crithidia luciliae</i>)</td> <td>Less than 1:10</td> </tr> </tbody> </table>	Test Number	Components	Reference Interval		Double-Stranded DNA (dsDNA) Antibody, IgG by ELISA	None Detected.	2002693	Double-Stranded DNA (dsDNA) Antibody, IgG by IFA (using <i>Crithidia luciliae</i>)	Less than 1:10												
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2002693	Double-Stranded DNA (dsDNA) Antibody, IgG by IFA (using <i>Crithidia luciliae</i>)	Less than 1:10																					
2005287	Chromatin Antibody, IgG	<table border="1"> <tbody> <tr> <td>19 Units or less</td> <td>Negative</td> </tr> <tr> <td>20-60 Units</td> <td>Moderate Positive</td> </tr> <tr> <td>61 Units or greater</td> <td>Strong Positive</td> </tr> </tbody> </table>	19 Units or less	Negative	20-60 Units	Moderate Positive	61 Units or greater	Strong Positive															
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2001601	RNA Polymerase III Antibody, IgG	<table border="1"> <tbody> <tr> <td>19 Units or less</td> <td>Negative</td> </tr> <tr> <td>20-39 Units</td> <td>Weak Positive</td> </tr> <tr> <td>40-80 Units</td> <td>Moderate Positive</td> </tr> <tr> <td>81 Units or greater</td> <td>Strong Positive</td> </tr> </tbody> </table>	19 Units or less	Negative	20-39 Units	Weak Positive	40-80 Units	Moderate Positive	81 Units or greater	Strong Positive													
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0050599	Scleroderma (Scl-70) (ENA) Antibody, IgG	<table border="1"> <tbody> <tr> <td>29 AU/mL or less</td> <td>Negative</td> </tr> <tr> <td>30-40 AU/mL</td> <td>Equivocal</td> </tr> <tr> <td>41 AU/mL or greater</td> <td>Positive</td> </tr> </tbody> </table>	29 AU/mL or less	Negative	30-40 AU/mL	Equivocal	41 AU/mL or greater	Positive															
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0050470	RNP (U1) (Ribonucleic Protein) (ENA) Antibody, IgG	<table border="1"> <tbody> <tr> <td>29 AU/mL or less</td> <td>Negative</td> </tr> <tr> <td>30-40 AU/mL</td> <td>Equivocal</td> </tr> <tr> <td>41 AU/mL or greater</td> <td>Positive</td> </tr> </tbody> </table>	29 AU/mL or less	Negative	30-40 AU/mL	Equivocal	41 AU/mL or greater	Positive															
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0050085	Smith (ENA) Antibody, IgG	<table border="1"> <tbody> <tr> <td>29 AU/mL or less</td> <td>Negative</td> </tr> <tr> <td>30-40 AU/mL</td> <td>Equivocal</td> </tr> <tr> <td>41 AU/mL or greater</td> <td>Positive</td> </tr> </tbody> </table>	29 AU/mL or less	Negative	30-40 AU/mL	Equivocal	41 AU/mL or greater	Positive															
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Note: The Anti-Nuclear Antibody (ANA), IgG by IFA with Reflex by IFA Pattern begins with Nuclear Antibody (ANA) by IFA, IgG. Depending on findings, one or more reflexive tests may be required. Tests added may include Double-Stranded DNA (dsDNA) Antibody, IgG by ELISA; Double-Stranded DNA (dsDNA) Antibody, IgG by IFA (using *Crithidia luciliae*); Chromatin Antibody, IgG; RNP (U1) (Ribonucleic Protein) (ENA) Antibody, IgG; Fibrillarin (U3 RNP) Antibody, IgG; Smith (ENA) Antibody, IgG; SSA 52 (Ro) (ENA) Antibody, IgG; SSA 60 (Ro) (ENA) Antibody, IgG; SSB (La) (ENA) Antibody, IgG; Scleroderma (Scl-70) (ENA) Antibody, IgG; PM/Scl-100 Antibody, IgG, by Immunoblot; and/or RNA Polymerase III Antibody, IgG. Additional charges apply.

ANA determined by indirect fluorescence assay (IFA) use HEp-2 substrate and IgG-specific conjugate at a screening dilution of 1:80. If positive, patterns reported include homogeneous, speckled, centromere, nucleolar, nuclear dots, or cytoplasmic. All positive results are reported with endpoint titers.

2011478

Arsenic, Random Urine with Reflex to Fractionated

U ARS RAND

Reference Interval:

Effective **November 13, 2017**

Test Number	Components	Reference Interval
	Arsenic, Urine - per volume	0.0- 34.9 µg/L (based on Biological Exposure Index)
	Arsenic, Urine-ratio to CRT	0.0-29.9 µg/g CRT
0020734	Arsenic, Fractionated, Urine	Test Number
		Components
		Reference Interval
	As Organic	Refer to report
	Arsenic Total Inorganic	Refer to report
	Arsenic, Methylated	Refer to report

0025000

Arsenic, Urine with Reflex to Fractionated

ARS U

Reference Interval:

Effective **November 13, 2017**

Test Number	Components	Reference Interval		
	Arsenic, Urine - per volume	0.0- 34.9 µg/L (based on Biological Exposure Index)		
	Arsenic, Urine - per24h	0.0- 49.9 µg/d		
	Arsenic, Urine-ratio to CRT	0.0-29.9 µg/gCRT		
0020734	Arsenic, Fractionated, Urine	Test Number		
		Components		
		Reference Interval		
	As Organic	Refer to report		
	Arsenic Total Inorganic	Refer to report		
	Arsenic, Methylated	Refer to report		
	Creatinine, Urine - per 24h	Age		
		Male		
		Female		
		3-8 years	140-700 mg/d	140-700 mg/d
		9-12 years	300-1300 mg/d	300-1300 mg/d
		13-17 years	500-2300 mg/d	400-1600 mg/d
		18-50 years	1000-2500 mg/d	700-1600 mg/d
51-80 years	800-2100 mg/d	500-1400 mg/d		
81 years and older	600-2000 mg/d	400-1300 mg/d		

2003150

Aspergillus Galactomannan Antigen by EIA, Bronchoscopy

ASPERAGB

Specimen Required: Collect: Lower respiratory material by bronchoscopy (BAL, **fluid, or** washings).

Specimen Preparation: Transfer 2 mL bronchoscopy specimen to a sterile ARUP Standard Transport Tube (ARUP Supply #43115) available online through eSupply using ARUP Connect™ or contact Client Services at (800) 522-2787. (Min: 0.6 mL)

Storage/Transport Temperature: Frozen.

Unacceptable Conditions: Sputum. Specimens in media or preservatives. Grossly bloody specimens.

Stability (collection to initiation of testing): Ambient: Unacceptable; Refrigerated: 1 week; Frozen: 1 week

New Test
Available Now

2014314

Autism and Intellectual Disability Comprehensive Panel

AID COMP



Patient History For Biochemical Genetics

Methodology: Tandem Mass Spectrometry, Electrophoresis/Spectrophotometry, Gas Chromatography/Mass Spectrometry, Liquid Chromatography/Tandem Mass Spectrometry, and Quantitative Liquid Chromatography/Tandem Mass Spectrometry, Genomic Microarray (Oligo-SNP Array), Polymerase Chain Reaction/Capillary Electrophoresis

Performed: Varies

Reported: 5-18 Days

Specimen Required: Patient Prep: **Urine:** Morning void preferred.

Plasma: Adults: Fasting specimen preferred. Infants and children: Draw specimen prior to feeding or 2-3 hours after a meal.

Whole Blood Specimens: no collection time requirements

Collect: **Test Requires 4 Specimens:** Urine, Plasma, and 2 Whole Blood

Urine: Random urine. Avoid dilute urine when possible.

Plasma: Green (Sodium or Lithium Heparin).

Whole Blood, Specimen 1: Lavender (EDTA), Pink (K₂ EDTA), or Yellow (ACD).

Whole Blood, Specimen 2: Green (Sodium Heparin). Also acceptable: Lavender (EDTA).

Specimen Preparation: **Urine:** Transfer 15 mL urine to ARUP Standard Tubes and freeze immediately. (Min: 10 mL; for volumes less than 10 mL, contact the Biochemical Genetics Lab before sending the specimen) Avoid dilute urine when possible.

Plasma: Separate from cells ASAP or within 2 hours of collection. Avoid transferring buffy coat material. Transfer 2.5 mL plasma to an ARUP Standard Transport Tube and freeze immediately. (Min: 0.75 mL)

Whole Blood Specimens: Transport 5 mL whole blood for each tube. (Min: 1.5 mL each)

Storage/Transport Temperature: **Urine and Plasma: CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered.**

Whole Blood Specimens: Room temperature.

Remarks: Label each container with specimen type.

Urine and Plasma: Clinical information is needed for appropriate interpretation. Additional required information includes age, gender, diet (e.g., TPN therapy), drug therapy, and family history. **Biochemical Genetics Patient History Form is available on the ARUP Web site at <http://www.aruplab.com/patienthistory> or by contacting ARUP Client Services.**

Unacceptable Conditions: **Urine:** Specimens exposed to more than one freeze/thaw cycle. Specimens containing preservatives.

Plasma: Specimens exposed to more than one freeze/thaw cycle. Hemolyzed specimens.

Whole Blood Specimens: Clotted specimens.

Stability (collection to initiation of testing): **Urine:** Ambient: Unacceptable; Refrigerated: Unacceptable; Frozen: 1 month

Plasma: After separation from cells: Ambient: Unacceptable; Refrigerated: 24 hours; Frozen: 1 month

Whole Blood, Specimen 1: Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable

Whole Blood, Specimen 2: Ambient: 48 hours; Refrigerated: 72 hours; Frozen: Unacceptable

Reference Interval: By report

Interpretive Data: See Compliance Statement B: www.aruplab.com/CS

Note: This panel includes Acylcarnitine Quantitative Profile, Plasma (ARUP test code 0040033); Mucopolysaccharides Screen - Electrophoresis and Quantitation, Urine (ARUP test code 0081352); Organic Acids, Urine (ARUP test code 0098389); Creatine Disorders Panel, Serum or Plasma (ARUP test code 2002328); Creatine Disorders Panel, Urine (ARUP test code 2002333); Amino Acids Quantitative by LC-MS/MS, Plasma (ARUP test code 2009389); Cytogenomic SNP Microarray (ARUP test code 2003414); Fragile X (*FMR1*) with Reflex to Methylation Analysis (ARUP test code 2009033). If Fragile X testing detects a CGG repeat of 55 or greater by PCR and capillary electrophoresis, methylation analysis will be added. Additional charges apply.

CPT Code(s): 82017; 82664; 83864; 83918; 82540 x2; 83789 x2; 82570; 82139; 81229; 81243; if reflexed add 81244;

New York DOH approval pending. Call for status update.

HOTLINE NOTE: Refer to the Test Mix Addendum for interface build information.

New Test
Available Now

2014312

Autism and Intellectual Disability Metabolic Panel

AID PAN



Patient History For Biochemical Genetics

Methodology: Tandem Mass Spectrometry, Electrophoresis/Spectrophotometry, Gas Chromatography/Mass Spectrometry, Liquid Chromatography/Tandem Mass Spectrometry
Performed: Varies
Reported: 5-18 Days

Specimen Required: Patient Prep: **Urine:** Morning void preferred.

Plasma: Adults: Fasting specimen preferred. Infants and children: Draw specimen prior to feeding or 2-3 hours after a meal.

Collect: **Urine and Plasma.**

Urine: Random urine. Avoid dilute urine when possible.

Plasma: Green (Sodium or Lithium Heparin).

Specimen Preparation: **Urine:** Transfer 15 mL urine to ARUP Standard Tubes and freeze immediately. (Min: 10mL; for volumes less than 10 mL, contact the Biochemical Genetics Lab before sending the specimen) Avoid dilute urine when possible. Label container with specimen type.

Plasma: Separate from cells ASAP or within 2 hours of collection. Avoid transferring buffy coat material. Transfer 2.5 mL plasma to an ARUP Standard Transport Tube and freeze immediately. (Min: 0.75 mL) Label container with specimen type.

Storage/Transport Temperature: **CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered.**

Remarks: **Clinical information is needed for appropriate interpretation.** Additional required information includes age, gender, diet (e.g., TPN therapy), drug therapy, and family history. **Biochemical Genetics Patient History Form is available on the ARUP Web site at <http://www.aruplab.com/patienthistory> or by contacting ARUP Client Services.**

Unacceptable Conditions: **Urine:** Specimens exposed to more than one freeze/thaw cycle. Specimens containing preservatives.

Plasma: Specimens exposed to more than one freeze/thaw cycle. Hemolyzed specimens.

Stability (collection to initiation of testing): **Urine:** Ambient: Unacceptable; Refrigerated: Unacceptable; Frozen: 1 month

Plasma: After separation from cells: Ambient: Unacceptable; Refrigerated: 24 hours; Frozen: 1 month

Reference Interval: By report

Interpretive Data: See Compliance Statement B: www.aruplab.com/CS

Note: This panel includes Acylcarnitine Quantitative Profile, Plasma (ARUP test code 0040033); Mucopolysaccharides Screen - Electrophoresis and Quantitation, Urine (ARUP test code 0081352); Organic Acids, Urine (ARUP test code 0098389); Creatine Disorders Panel, Serum or Plasma (ARUP test code 2002328); Creatine Disorders Panel, Urine (ARUP test code 2002333); Amino Acids Quantitative by LC-MS/MS, Plasma (ARUP test code 2009389)

CPT Code(s): 82017; 82664; 83864; 83918; 82540 x2; 83789 x2; 82570; 82139

New York DOH Approved.

HOTLINE NOTE: Refer to the Test Mix Addendum for interface build information.

0025013

Cadmium Exposure Panel - OSHA

CD EXP

Reference Interval:

Test Number	Components	Reference Interval
0099675	Cadmium, Blood	0.0-5.0 µg/L
	Cadmium, Urine - per volume	Effective November 13, 2017 0.0-1.0 µg/L
	Cadmium, Urine-ratio toCRT	Effective November 13, 2017 0.0-3.2 µg/g CRT
	Beta-2-Microglobulin, Urine	Effective February 18, 2014 0-300 µg/L
	Beta-2-Microglobulin per gram of creatinine	0-300 µg/g CRT
	Creatinine, Urine - per volume	No reference interval

2011479

Cadmium, Random Urine

U CAD RAND

Reference Interval:

Effective November 13, 2017

Components	Reference Interval
Cadmium, Urine - per volume	0.0-1.0µg/L
Cadmium Rnd Urn ratio/CRT nonoccupation	0.0-3.2 µg/gCRT

0025040

Cadmium, Urine

CADMIUM U

Reference Interval:

Effective November 13, 2017

Test Number	Components	Reference Interval	
	Cadmium, Urine - per volume	0.0-1.0 µg/L	
	Cadmium, Urine - per 24h	0.0-3.2 µg/d	
	Cadmium, Urine - ratio to CRT	0.0-3.2 µg/g CRT	
	Creatinine, Urine - per 24h	Age	
		Male	
		Female	
		3-8 years	140-700 mg/d
		9-12 years	300-1300 mg/d
		13-17 years	500-2300 mg/d
		18-50 years	1000-2500 mg/d
	51-80 years	800-2100 mg/d	
	81 years and older	600-2000 mg/d	

0092211

Carbamazepine Epoxide and Total

CARB EPOXT

Reference Interval:

Effective November 13, 2017

Test Number	Components	Therapeutic Range
	Carbamazepine-10, 11 Epoxide	Not well established Toxic: Greater than 15.0 µg/mL
	Total Carbamazepine	Therapeutic Range: 4.0-12.0 µg/mL Toxic: Greater than 15.0 µg/mL

2002064

Chimerism, Post-Transplant, Sorted Cells

STR-POSTSC

CPT Code(s): 81268; If **cell sorting** is performed, add 88184 or 88184, 88185

0060241

***Chlamydia trachomatis* and *Neisseria gonorrhoeae* by Transcription-Mediated Amplification (TMA)**

CGAMD

Specimen Required: Collect: **Endocervical**, vaginal, or male **urethral specimen** with APTIMA Unisex Swab Specimen Collection kit (ARUP supply #28907) available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787.
Also acceptable: First catch urine.
Refer to "Sample Collection for the Diagnosis of STD" under Specimen Handling at www.aruplab.com for specific specimen collection and transport instructions.
Specimen Preparation: Swab: Place blue swab in Swab Specimen Transport Tube, break shaft off at scoreline then recap tube.
Urine: Transfer 2 mL urine **within 24 hours to an** APTIMA Urine Specimen Transport Tube (ARUP supply #28908) available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787. Liquid level must be between fill lines on tube.
Storage/Transport Temperature: Refrigerated.
Remarks: Specimen source is required.
Unacceptable Conditions: Large white swab included in APTIMA Unisex Swab Specimen Collection kit is for preparatory cleaning of the endocervix and is unacceptable for testing. Specimens in any transport media other than indicated above. Specimens in swab transport media without a swab.
Stability (collection to initiation of testing): Swab: Ambient: 2 months; Refrigerated: 2 months; Frozen: 1 year
APTIMA Urine Specimen Transport Tube: Ambient: 1 month; Refrigerated: 1 month; Frozen: 1 year

2011164

***Chlamydia trachomatis* and *Neisseria gonorrhoeae* by Transcription-Mediated Amplification (TMA) with Confirmation**

CTNG CONF

Specimen Required: Collect: **Endocervical**, vaginal, or male **urethral specimen** with APTIMA Unisex Swab Specimen Collection kit (ARUP supply #28907) available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787.
Also acceptable: First catch urine OR Cervical brush in ThinPrep Pap test collection kit.
Refer to "Sample Collection for the Diagnosis of STD" under Specimen Handling at www.aruplab.com for specific specimen collection and transport instructions.
Specimen Preparation: Swab: place blue swab in Swab Specimen Transport Tube, break shaft off at scoreline then recap tube.
Urine: Transfer 2 mL urine **within 24 hours to** APTIMA Urine Specimen Transport Tube (ARUP supply #28908) available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787. Liquid level must be between fill lines on tube.
ThinPrep: Vortex ThinPrep PreservCyt solution and transfer 1 mL to an APTIMA Specimen Transfer Tube (ARUP supply #42711) available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787. To reduce the potential for contamination, ThinPrep specimens should be poured off, using sterile technique, into the APTIMA Specimen Transfer Tube prior to Cytology Testing.
Storage/Transport Temperature: Refrigerated
Remarks: Specimen source is required.
Unacceptable Conditions: Large white swab included in APTIMA Unisex Swab Specimen Collection kit is for preparatory cleaning of the endocervix and is unacceptable for testing. Specimens in any transport media other than indicated above. Specimens in swab transport media without a swab.
Stability (collection to initiation of testing): Swab: Ambient: 2 months; Refrigerated: 2 months; Frozen: 1 year
APTIMA Urine Specimen Transport Tube: Ambient: 1 month; Refrigerated: 1 month; Frozen: 1 year
APTIMA Specimen Transfer Tube: Ambient: 2 weeks; Refrigerated: 1 month; Frozen: 1 year
ThinPrep: Ambient: 1 month; Refrigerated: 1 month; Frozen: Unacceptable

2013767

***Chlamydia trachomatis* and *Neisseria gonorrhoeae* by Transcription-Mediated Amplification (TMA) with Reflex to *Chlamydia trachomatis* L serovars (LGV) by PCR**

CGAMD LGVR

Specimen Required: Collect: **Endocervical**, vaginal or male urethral specimen with APTIMA Unisex Swab Specimen Collection kit (ARUP supply #28907) available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787.
Also acceptable: First catch urine.
Refer to "Sample Collection for the Diagnosis of STD" under Specimen Handling at www.aruplab.com for specific specimen collection and transport instructions.
Specimen Preparation: Swab: Place blue swab in Swab Specimen Transport Tube, break shaft off at scoreline then recap tube.
Urine: Transfer 2 mL urine **within 24 hours to an** APTIMA Urine Specimen Transport Tube (ARUP supply #28908) available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787. Liquid level must be between fill lines on tube.
Storage/Transport Temperature: Refrigerated.
Remarks: Specimen source is required.
Unacceptable Conditions: Large white swab included in APTIMA Unisex Swab Specimen Collection kit is for preparatory cleaning of the endocervix and is unacceptable for testing. Specimens in swab transport media without a swab.
Stability (collection to initiation of testing): Ambient: 1 month; Refrigerated: 1 month; Frozen: 1 month

0060243

***Chlamydia trachomatis* by Transcription-Mediated Amplification (TMA)**

CTAMD

Specimen Required: Collect: **Endocervical**, vaginal, or male **urethral specimen** with APTIMA Unisex Swab Specimen Collection kit (ARUP supply #28907) available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787.
Also acceptable: First **catch urine** OR Cervical brush in ThinPrep Pap test collection kit. Refer to "Sample Collection for the Diagnosis of STD" under Specimen Handling at www.aruplab.com for specific specimen collection and transport instructions.
Specimen Preparation: Swab: Place blue swab in Swab Specimen Transport Tube, break shaft off at score line then recap tube.
Urine: Transfer 2 mL urine **within 24 hours** to APTIMA Urine Specimen Transport Tube (ARUP supply #28908) available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787. Liquid level must be between fill lines on tube.
ThinPrep: Vortex ThinPrep PreservCyt solution and transfer 1 mL to an APTIMA Specimen Transfer Tube (ARUP supply #42711) available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787. To reduce the potential for contamination, ThinPrep specimens should be poured off, using sterile technique, into the APTIMA Specimen Transfer Tube prior to Cytology Testing.
Storage/Transport Temperature: Refrigerated.
Remarks: Specimen source is required.
Unacceptable Conditions: Large white swab included in APTIMA Unisex Swab Specimen Collection kit is for preparatory cleaning of the endocervix and is unacceptable for testing. Specimens in any transport media other than indicated above. Specimens in swab transport media without a swab.
Stability (collection to initiation of testing): Swab: Ambient: 2 months; Refrigerated: 2 months; Frozen: 1 year
APTIMA Urine Specimen Transport Tube: Ambient: 1 month; Refrigerated: 1 month; Frozen: 1 year
APTIMA Specimen Transfer Tube: Ambient: 2 weeks; Refrigerated: 1 month; Frozen: 1 year
ThinPrep: Ambient: 1 month; Refrigerated: 1 month; Frozen: Unacceptable

0025068

Chromium, Urine

CR-U

Reference Interval:

Effective: **November 13, 2017**

Test Number	Components	Reference Interval	
	Chromium, Urine - per volume	0.0-0.9 µg/L	
	Chromium, Urine - per 24h	0.0-0.9 µg/d	
	Chromium, urine - ratio to CRT	0.0-0.9 ug/gCRT	
	Creatinine, Urine - per 24h	Age	
		Male	
		Female	
		3-8 years	140-700 mg/d
		9-12 years	300-1300 mg/d
		13-17 years	500-2300 mg/d
		18-50 years	1000-2500 mg/d
	51-80 years	800-2100 mg/d	
	81 years and older	600-2000 mg/d	

2005160

Chymotrypsin, Fecal

CHYMOTRYP

Performed: Varies
Reported: 3-17 days

0050588

Coccidioides Antibodies Panel, Serum by CF, ID, ELISA

COCCI PAN

Performed: Sun-Sat
Reported: 2-5 days

Specimen Required: Collect: Serum Separator Tube (SST).
Specimen Preparation: Separate from cells ASAP or within 2 hours of collection. **Transfer 2 mL serum to an ARUP Standard Transport Tube.** (Min: 0.6 mL) Parallel testing is preferred and convalescent specimens **must** be received within 30 days from receipt of the acute specimens.
Storage/Transport Temperature: Refrigerated.
Remarks: Mark specimens plainly as "acute" or "convalescent."
Unacceptable Conditions: Other body fluids. Contaminated, hemolyzed, or severely lipemic specimens.
Stability (collection to initiation of testing): After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)

0050137 ***Coccidioides Antibodies, IgG and IgM by ELISA*** **COCCI G/M**

Performed: Sun-Sat
Reported: 1-3 days

Specimen Required: Collect: Serum Separator Tube (SST).
Specimen Preparation: Separate from cells ASAP or within 2 hours of collection. Transfer 2 mL serum to an ARUP Standard Transport Tube. (Min: 0.15 mL) Parallel testing is preferred and convalescent specimens **must** be received within 30 days from receipt of the acute specimens.
Storage/Transport Temperature: Refrigerated.
Remarks: **Please mark specimens plainly as "acute" or "convalescent."**
Unacceptable Conditions: Contaminated, hemolyzed, or severely lipemic specimens.
Stability (collection to initiation of testing): Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)

0050170 ***Coccidioides Antibody by CF*** **COCCI**

Specimen Required: Collect: Serum Separator Tube (SST).
Specimen Preparation: Separate from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.15 mL) Parallel testing is preferred and convalescent specimens **must** be received within 30 days from receipt of acute specimens.
Storage/Transport Temperature: Refrigerated.
Remarks: **Mark specimens plainly as "acute" or "convalescent."**
Unacceptable Conditions: Contaminated, hemolyzed, or severely lipemic specimens.
Stability (collection to initiation of testing): After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)

Interpretive Data: Any titer suggests past or current infection. However, greater than 30 percent of cases with chronic residual pulmonary disease have negative Complement Fixation (CF) tests. Titers of less than 1:32 (even as low as 1:2) may indicate past infection or self-limited disease; anticoccidioidal CF antibody titers in excess of 1:16 may indicate disseminated infection. CF serology may be used to follow therapy. Antibody in CSF is considered diagnostic for coccidioidal meningitis, although 10 percent of patients with coccidioidal meningitis will not have antibody in CSF.

0050179 ***Coccidioides Antibody, IgG by ELISA*** **COCCI G**

Performed: Sun-Sat
Reported: 1-3 days

Specimen Required: Collect: Serum Separator Tube (SST).
Specimen Preparation: Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.15 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Contaminated, hemolyzed, or severely lipemic specimens.
Stability (collection to initiation of testing): After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)

0050178 ***Coccidioides Antibody, IgM by ELISA*** **COCCI M**

Performed: Sun-Sat
Reported: 1-3 days

Specimen Required: Collect: Serum Separator Tube (SST).
Specimen Preparation: Separate from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.15 mL) Parallel testing is preferred and convalescent specimens must be received within 30 days from receipt of the acute specimens.
Storage/Transport Temperature: Refrigerated.
Remarks: **Mark specimens plainly as acute or convalescent.**
Unacceptable Conditions: Contaminated, hemolyzed, or severely lipemic specimens.
Stability (collection to initiation of testing): After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)

0050183

Coccidioides immitis Antibodies by Immunodiffusion

COCCI-PPT

Performed: Sun-Sat
Reported: 2-4 days

Specimen Required: Collect: Serum Separator Tube (SST).

Specimen Preparation: Transfer 0.5 mL serum to an ARUP Standard Transport Tube. (Min: 0.15 mL)

Storage/Transport Temperature: Refrigerated.

Unacceptable Conditions: Contaminated, hemolyzed, or severely lipemic specimens.

Stability (collection to initiation of testing): Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)

2011480

Copper, Random Urine

U COP RAND

Reference Interval:

Effective November 13, 2017

Components	Reference Interval
Copper, Urine-per volume	0.3-3.2 µg/dL
Copper Urine - ratio to CRT	10.0-45.0 µg/gCRT

0020461

Copper, Urine

COPPER U

Reference Interval:

Effective November 13, 2017

Test Number	Components	Reference Interval																					
	Copper, Urine-per volume	0.3-3.2 µg/dL																					
	Copper, Urine-per 24-h	3.0-45.0 µg/d																					
	Copper, Urine-ratio to CRT	10.0-45.0 µg/g CRT																					
	Creatinine, Urine - per 24h	<table border="1"> <thead> <tr> <th>Age</th> <th>Male</th> <th>Female</th> </tr> </thead> <tbody> <tr> <td>3-8 years</td> <td>140-700 mg/d</td> <td>140-700 mg/d</td> </tr> <tr> <td>9-12 years</td> <td>300-1300 mg/d</td> <td>300-1300 mg/d</td> </tr> <tr> <td>13-17 years</td> <td>500-2300 mg/d</td> <td>400-1600 mg/d</td> </tr> <tr> <td>18-50 years</td> <td>1000-2500 mg/d</td> <td>700-1600 mg/d</td> </tr> <tr> <td>51-80 years</td> <td>800-2100 mg/d</td> <td>500-1400 mg/d</td> </tr> <tr> <td>81 years and older</td> <td>600-2000 mg/d</td> <td>400-1300 mg/d</td> </tr> </tbody> </table>	Age	Male	Female	3-8 years	140-700 mg/d	140-700 mg/d	9-12 years	300-1300 mg/d	300-1300 mg/d	13-17 years	500-2300 mg/d	400-1600 mg/d	18-50 years	1000-2500 mg/d	700-1600 mg/d	51-80 years	800-2100 mg/d	500-1400 mg/d	81 years and older	600-2000 mg/d	400-1300 mg/d
Age		Male	Female																				
3-8 years		140-700 mg/d	140-700 mg/d																				
9-12 years		300-1300 mg/d	300-1300 mg/d																				
13-17 years		500-2300 mg/d	400-1600 mg/d																				
18-50 years		1000-2500 mg/d	700-1600 mg/d																				
51-80 years		800-2100 mg/d	500-1400 mg/d																				
81 years and older	600-2000 mg/d	400-1300 mg/d																					

HOTLINE NOTE: There is a numeric map change associated with this test.

Change the numeric map for component 0020101, Copper, Urine - per 24h from XXXXXX to XXXXXX.X.

2000624

Cytology, Pap Smear

GG REQUEST

CPT Code(s): 88164; if reviewed by a pathologist add 88141.

2000134

Cytology, SurePath Liquid-Based Pap Test

GA REQUEST

CPT Code(s): 88142; if reviewed by pathologist add 88141

2000133

Cytology, SurePath Liquid-Based Pap Test and Human Papillomavirus (HPV), High Risk by PCR, SurePath (for routine co-testing in women over 30)

GH REQUEST

CPT Code(s): 88142; if reviewed by pathologist add 88141; if reflexed to HPV, add 87624

2000135 **Cytology, SurePath Liquid-Based Pap Test with Reflex to Human Papillomavirus (HPV), High Risk by PCR, SurePath** **GR REQUEST**

CPT Code(s): **88142; if reviewed by pathologist add 88141. If reflexed add 87624.**

2000137 **Cytology, ThinPrep Pap Test** **GT REQUEST**

CPT Code(s): **88142; if reviewed by pathologist add 88141**

2000136 **Cytology, ThinPrep Pap Test and Human Papillomavirus (HPV), High Risk by Transcription-Mediated Amplification (TMA) (for routine co-testing in women over 30)** **TH REQUEST**

CPT Code(s): **88142; if reviewed by pathologist add 88141; 87624**

2000138 **Cytology, ThinPrep Pap Test with Reflex to Human Papillomavirus (HPV), High Risk, E6/E7 mRNA by Transcription-Mediated Amplification (TMA)** **TR REQUEST**

CPT Code(s): **88142; if reviewed by pathologist add 88141. If reflexed add 87624**

0050165 **Cytomegalovirus Antibody, IgG** **CMV IGG**

Specimen Required: Collect: Serum Separator Tube (SST).
Specimen Preparation: Allow specimen to clot completely at room temperature. Separate from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.5 mL) **Parallel** testing is preferred and convalescent specimens **must** be received within 30 days from receipt of the acute specimens.
Storage/Transport Temperature: Refrigerated.
Remarks: **Label specimens plainly as "acute" or "convalescent."**
Unacceptable Conditions: Contaminated, heat-inactivated, or grossly hemolyzed specimens.
Stability (collection to initiation of testing): After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (Avoid repeated freeze/thaw cycles)

0050553 **Cytomegalovirus Antibody, IgM** **CMV IGM**

Specimen Required: Collect: Serum Separator Tube (SST).
Specimen Preparation: Allow specimen to clot completely at room temperature. Separate from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.5 mL) **Parallel** testing is preferred and convalescent specimens **must** be received within 30 days from receipt of the acute specimens.
Storage/Transport Temperature: Refrigerated.
Remarks: **Label specimens plainly as "acute" or "convalescent."**
Unacceptable Conditions: Contaminated, heat-inactivated or grossly hemolyzed specimens.
Stability (collection to initiation of testing): After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (Avoid repeated freeze/thaw cycles)

0092516 Drugs of Abuse Panel, Meconium - Screen with Reflex to Confirmation/Quantitation MEC 9

Methodology: Qualitative Enzyme-Linked Immunosorbent **Assay/Quantitative** Liquid Chromatography-Tandem Mass Spectrometry

Specimen Required: Collect: Meconium. All meconium (blackish material) excreted until milk/formula based stool (yellow-green) appears.
Specimen Preparation: **Transport all available meconium (4 g is preferred). (Min: 2 g or 3/4 inch cube on each side)**
Storage/Transport Temperature: **Room temperature.**
Stability (collection to initiation of testing): Ambient: 1 week; Refrigerated: 3 months; Frozen: 1 year

Note: If the specimen screens positive, then Confirmation/Quantitation by **LC-MS/MS** will be added. Additional charges apply.

Unless ARUP is otherwise notified, reflex confirmation testing will be performed in the following order of priority:

- Amphetamines (0.125 g sample required)
- Cocaine (0.25 g sample required)
- Opiates (0.125 g required)
- Buprenorphine (0.125 g required)
- Marijuana (0.125 g required)
- Benzodiazepines (0.125 g sample required)
- Methadone (0.125 g sample required)
- Phencyclidine - PCP (0.25 g sample required)
- Barbiturates (0.25 g sample required)

2011241 Duchenne/Becker Muscular Dystrophy (DMD) Deletion/Duplication with Reflex to Sequencing DMD REFLEX

CPT Code(s): 81161; if reflexed add **81479**

2005730 Enterovirus and Parechovirus by PCR EVPEHV

Methodology: **Qualitative Polymerase** Chain Reaction

Interpretive Data:
 See Compliance Statement A: www.aruplab.com/CS

0050249 Enterovirus by PCR EV PCR

Methodology: **Qualitative Polymerase** Chain Reaction

Interpretive Data:
 See Compliance Statement A: www.aruplab.com/CS

0050600 Epstein-Barr Virus Antibody Panel I EBV PAN

Specimen Required: Collect: Serum Separator Tube (SST).
Specimen Preparation: **Allow specimen to clot completely at room temperature.** Separate from cells ASAP or within 2 hours of collection. Transport 2 mL serum to an **ARUP Standard Transport Tube**. (Min: 0.5 mL) Parallel testing is preferred and convalescent specimens **must** be received within 30 days from receipt of acute **specimens**.
Storage/Transport Temperature: Refrigerated.
Remarks: **Label specimens plainly as "acute" or "convalescent."**
Unacceptable Conditions: **Contaminated**, heat-inactivated, or grossly hemolyzed specimens.
Stability (collection to initiation of testing): After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (Avoid repeated freeze/thaw cycles)

0050602 Epstein-Barr Virus Antibody Panel II EBV PAN 2

Specimen Required: Collect: Serum Separator Tube (SST).
Specimen Preparation: Allow specimen to clot completely at room temperature. Separate from cells ASAP or within 2 hours of collection. Transfer 2 mL serum to an ARUP Standard Transport Tube. (Min: 0.5 mL) Parallel testing is preferred and convalescent specimens **must** be received within 30 days from receipt of the acute specimens.
Storage/Transport Temperature: Refrigerated.
Remarks: **Label specimens plainly as “acute” or “convalescent.”**
Unacceptable Conditions: Contaminated, heat-inactivated, or grossly hemolyzed specimens.
Stability (collection to initiation of testing): After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (Avoid repeated freeze/thaw cycles)

0050225 Epstein-Barr Virus Antibody to Early D Antigen (EA-D), IgG EBV EAD

Specimen Required: Collect: Serum Separator Tube (SST).
Specimen Preparation: Allow specimen to clot completely at room temperature. Separate from cells ASAP or within 2 hours of collection. Transfer 2 mL serum to an ARUP Standard Transport Tube. (Min: 0.5 mL) Parallel testing is preferred and convalescent specimens **must** be received within 30 days from receipt of the acute specimens.
Storage/Transport Temperature: Refrigerated.
Remarks: **Label specimens plainly as “acute” and “convalescent.”**
Unacceptable Conditions: Contaminated, heat-inactivated or grossly hemolyzed specimens.
Stability (collection to initiation of testing): After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (Avoid repeated freeze/thaw cycles)

0050245 Epstein-Barr Virus Antibody to Nuclear Antigen, IgG EBV NA

Specimen Required: Collect: Serum Separator Tube (SST).
Specimen Preparation: Allow specimen to clot completely at room temperature. Separate from cells ASAP or within 2 hours of collection. Transfer 2 mL serum to an ARUP Standard Transport Tube. (Min: 0.5 mL) Parallel testing is preferred and convalescent specimens **must** be received within 30 days from receipt of the acute specimens.
Storage/Transport Temperature: Refrigerated.
Remarks: **Label specimens plainly as “acute” or “convalescent.”**
Unacceptable Conditions: Contaminated, heat-inactivated or grossly hemolyzed specimens.
Stability (collection to initiation of testing): After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (Avoid repeated freeze/thaw cycles)

0050235 Epstein-Barr Virus Antibody to Viral Capsid Antigen, IgG EBV G

Specimen Required: Collect: Serum Separator Tube (SST).
Specimen Preparation: Allow specimen to clot completely at room temperature. Separate from cells ASAP or within 2 hours of collection. Transfer 2 mL serum to an ARUP Standard Transport Tube. (Min: 0.5 mL) Parallel testing is preferred and convalescent specimens **must** be received within 30 days from receipt of the acute specimens.
Storage/Transport Temperature: Refrigerated.
Remarks: **Label specimens plainly as “acute” or “convalescent.”**
Unacceptable Conditions: Contaminated, heat-inactivated or grossly hemolyzed specimens.
Stability (collection to initiation of testing): After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (Avoid repeated freeze/thaw cycles)

0051627 Epstein-Barr Virus Antibody to Viral Capsid Antigen, IgG and IgA EBV PAN 3

Specimen Required: Collect: Serum Separator Tube (SST).
Specimen Preparation: Allow specimen to clot completely at room temperature. Separate from cells ASAP or within 2 hours of collection. Transfer 2 mL serum to an ARUP Standard Transport Tube. (Min: 0.5 mL) Parallel testing is preferred and convalescent specimens **must** be received within 30 days from receipt of the acute specimens.
Storage/Transport Temperature: Refrigerated.
Remarks: **Label specimens plainly as “acute” or “convalescent.”**
Unacceptable Conditions: Contaminated, heat-inactivated, or grossly hemolyzed specimens.
Stability (collection to initiation of testing): After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (Avoid repeated freeze/thaw cycles)

0050240

Epstein-Barr Virus Antibody to Viral Capsid Antigen, IgM

EBV M

Specimen Required: Collect: Serum Separator Tube (SST).

Specimen Preparation: Allow specimen to clot completely at room temperature. Separate from cells ASAP or within 2 hours of collection. Transfer 2 mL serum to an ARUP Standard Transport Tube. (Min: 0.5 mL) Parallel testing is preferred and convalescent specimens **must** be received within 30 days from receipt of the acute specimens.

Storage/Transport Temperature: Refrigerated.

Remarks: Label specimens plainly as “acute” or “convalescent.”

Unacceptable Conditions: Contaminated, heat-inactivated or grossly hemolyzed specimens.

Stability (collection to initiation of testing): After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (Avoid repeated freeze/thaw cycles)

New Test

2013694

Explyfy Respiratory Pathogens by Next Generation Sequencing

RESP NGS

Available Now

Methodology: Massively Parallel Sequencing

Performed: Sun-Sat

Reported: 3-6 days

Specimen Required: Collect: Bronchoalveolar lavage (BAL)

Specimen Preparation: Transfer 2 mL to a sterile container. (Min: 1.2 mL)

Storage/Transport Temperature: Frozen

Remarks: Specimen source required.

Stability (collection to initiation of testing): Ambient: Unacceptable; Refrigerated: 4 days; Frozen: 30 days

Reference Interval: By report

Interpretive Data: This test detects potential respiratory pathogens by unbiased next-generation cDNA and DNA sequencing of viral, bacterial, and fungal transcriptome and genome sequences. Sequencing data are interpreted by the Explyfy software.

Negative results do not rule out viral, bacterial, or fungal infections. Targeted, PCR-based tests are generally more sensitive and are preferred when specific pathogens are suspected, especially for DNA viruses (Adenovirus, CMV, HHV6, HSV, and VZV), mycobacteria, and fungi.

The analytical sensitivity of this test depends on the cellularity of the sample and the concentration of all microbes present. Analytical sensitivity is assessed using Internal Controls that are added to each sample. Sequencing data for Internal Controls is quantified. Samples with Internal Control values below the validated minimum may have reduced analytical sensitivity or contain inhibitors and are reported as ‘Reduced Analytical Sensitivity’. Additional respiratory pathogens to those reported cannot be excluded in samples with ‘Reduced Analytical Sensitivity’.

Due to the complexity of next generation sequencing methodologies, there may be a risk of false-positive results. Contamination with organisms from the upper respiratory tract during specimen collection can also occur. The detection of viral, bacterial, and fungal nucleic acid does not imply organisms causing invasive infection. Results from this test need to be interpreted in conjunction with the clinical history, results of other laboratory tests, epidemiologic information, and other available data. Confirmation of positive results by an alternate method may be indicated in select cases.

Test developed and characteristics determined by ARUP Laboratories.

See Compliance Statement B: aruplab.com/CS

CPT Code(s): 87999

New York DOH approval pending. Call for status update.

HOTLINE NOTE: Refer to the Test Mix Addendum for interface build information.

2012155

Charcot-Marie-Tooth (CMT) and Related Hereditary Neuropathies, PMP22 Deletion/Duplication with Reflex to Sequencing Panel

CMT REFLEX

CPT Code(s): 81324; if reflexed add 81479

Quarterly HOTLINE: Effective **November 13, 2017**

0050750

Fungal Antibodies by CF, CSF

FUNG CSF

Performed: Sun-Sat
Reported: 2-4 days

Specimen Required: Collect: CSF.

Specimen Preparation: Transfer 1 mL CSF to an ARUP Standard Transport Tube. (Min: 0.35 mL)

Storage/Transport Temperature: Refrigerated.

Unacceptable Conditions: **Other body fluids. Contaminated, hemolyzed, xanthochromic, or severely lipemic specimens.**

Stability (collection to initiation of testing): Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)

Reference Interval:

Effective November 13, 2017

Test Number	Components	Reference Interval
	<i>Aspergillus</i> Antibodies, CSF by CF	Less than 1:2
	<i>Blastomyces</i> Antibody by CF	Less than 1:2
3000059	<i>Coccidioides</i> Antibody by CF, CSF	Less than 1:2
	<i>Histoplasma</i> Mycelia by CF	Less than 1:2
	<i>Histoplasma</i> Yeast by CF	Less than 1:2

0050605

Fungal Antibodies by CF, Serum

FUNG PKG

Specimen Required: Collect: Serum Separator Tube (SST).

Specimen Preparation: Separate from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.35 mL) Parallel testing is preferred and convalescent specimens **must** be received within 30 days from receipt of the acute **specimens**.

Storage/Transport Temperature: Refrigerated.

Remarks: **Mark specimens plainly as acute or convalescent.**

Unacceptable Conditions: Contaminated or severely lipemic specimens.

Stability (collection to initiation of testing): After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)

2001771

Glutamic Acid Decarboxylase Antibody

GAD-AB

Interpretive Data: A value greater than 5.0 **Kronus Units/mL** is considered positive for Glutamic Acid Decarboxylase Antibody (**GAD Ab**). **Kronus units are arbitrary. Kronus Units = U/mL.**

This assay is intended for the semi-quantitative determination of the GAD Ab in human serum. Results should be interpreted within the context of clinical symptoms.

2011304

Heavy Metals Panel 3, Random Urine with Reflex to Arsenic Fractionated

HYMETU RND

Reference Interval:

Test Number	Components	Reference Interval		
	Arsenic, Urine - per volume	Effective November 13, 2017 0.0- 34.9 µg/L (based on Biological Exposure Index)		
	Arsenic, Urine - ratio to CRT	Effective November 13, 2017 0.0- 29.9 ug/gCRT		
0020734	Arsenic, Fractionated, Urine	Test Number	Components	Reference Interval
			As Organic	Refer to report
			Arsenic Total Inorganic	Refer to report
			Arsenic, Methylated	Refer to report
	Lead, Urine - per volume	Effective November 13, 2017 0.0-1.4 µg/L		
	Lead, Urine - ratio to CRT	Effective November 13, 2017 0.0-1.4 ug/gCRT		
	Mercury, Urine - per volume	Effective November 13, 2017 0.0-1.9 µg/L		
	Mercury, Urine - ratio to CRT	Effective November 13, 2017 0.0-20.0 µg/gCRT		

Interpretive Data: Quantification of urine excretion rates before or after chelation therapy has been used as an indicator of lead exposure. Urinary excretion of >125 mg of lead per 24 hours is usually associated with related evidence of lead toxicity.

Urinary mercury levels predominantly reflect acute or chronic elemental or inorganic mercury exposure. Urine concentrations in unexposed individuals are typically less than 10 µg/L. 24 hour urine concentrations of 30 to 100 µg/L may be associated with subclinical neuropsychiatric symptoms and tremors. Concentrations greater than 100 µg/L can be associated with overt neuropsychiatric disturbances and tremors. Urine mercury levels may be useful in monitoring chelation therapy.

The ACGIH Biological Exposure Index (BEI) for arsenic in urine is 35 µg/L. The ACGIH BEI is based on the sum of inorganic and methylated species. For specimens with a total arsenic concentration of 35 to 2000 µg/L, fractionation is automatically performed to determine the proportions of inorganic, methylated and organic species. It may be appropriate to request fractionation for specimens with a total arsenic greater than 30 µg/gCRT despite a total arsenic concentration less than 35 µg/L. If low-level chronic poisoning is suspected, the µg/gCRT ratio may be a more sensitive indicator of arsenic exposure than the total arsenic concentration.

HOTLINE NOTE: There is a numeric map change associated with this test.
Change the numeric map for component 0025062, Lead, Urine - per volume from XXXXX to **XXXXX.X**.

0099475

Heavy Metals Panel 3, Urine with Reflex to Arsenic Fractionated

HY MET U

Reference Interval:

Test Number	Components	Reference Interval		
0025000	Arsenic, Urine with Reflex to Fractionated	Effective November 13, 2017		
		Test Number	Components	Reference Interval
			Arsenic, Urine - per volume	0.0- 34.9 µg/L (based on Biological Exposure Index)
			Arsenic, Urine - per24h	0.0- 49.9 µg/d
			Arsenic, Urine-ratio to CRT	0.0-29.9 ug/gCRT
		0020734	Arsenic, Fractionated, Urine	Refer to report
	Creatinine, Urine - per 24h	Refer to report		
0025060	Lead, Urine	Effective November 13, 2017		
		Test Number	Components	Reference Interval
			Lead, Urine - per 24h	0.0- 8.1 µg/d
			Lead, Urine - per volume	0.0- 1.4 µg/L
			Lead Urine-ratio to CRT	0.0-1.4 ug/gCRT
			Creatinine, Urine - per 24h	Refer to report
0025050	Mercury, Urine	Effective November 13, 2017		
		Test Number	Components	Reference Interval
			Mercury, Urine - per 24h	0.0- 2.9 µg/d
			Mercury, Urine - per volume	0.0- 1.9 µg/L
			Mercury, Urine - ratio to CRT	0.0-20.0 µg/gCRT
			Creatinine, Urine - per 24h	Refer to report

Interpretive Data: Quantification of urine excretion rates before or after chelation therapy has been used as an indicator of lead exposure. Urinary excretion of >125 mg of lead per 24 hours is usually associated with related evidence of lead toxicity.

Urinary mercury levels predominantly reflect acute or chronic elemental or inorganic mercury exposure. Urine concentrations in unexposed individuals are typically less than 10 µg/L. 24 hour urine concentrations of 30 to 100 µg/L may be associated with subclinical neuropsychiatric symptoms and tremor while concentrations greater than 100 µg/L can be associated with overt neuropsychiatric disturbances and tremors. Urine mercury levels may be useful in monitoring chelation therapy.

The ACGIH Biological Exposure Index (BEI) for arsenic in urine is 35 µg/L. The ACGIH BEI is based on the sum of inorganic and methylated species. For specimens with a total arsenic concentration between 35-2000 µg/L, fractionation is automatically performed to determine the proportions of inorganic, methylated and organic species. It may be appropriate to request fractionation for specimens with a total arsenic greater than 30 µg/gCRT despite a total arsenic concentration less than 35 µg/L. If low-level chronic poisoning is suspected, the µg/gCRT ratio may be a more sensitive indicator of arsenic exposure than the total arsenic concentration.

See Compliance Statement B: www.aruplab.com/CS

HOTLINE NOTE: There is a numeric map change associated with this test.

Change the numeric map for component 0025062, Lead, Urine - per volume from XXXXX to **XXXXX.X**.

Change the numeric map for component 0025061, Lead, Urine - per 24h from XXXXX to **XXXXX.X**

Change the numeric map for component 0025051, Mercury, Urine - per 24h from XXX to **XXX.X**.

0020572

Heavy Metals Panel 4, Urine with Reflex to Arsenic Fractionated

HY MET U4

Reference Interval:

Test Number	Components	Reference Interval		
0025000	Arsenic, Urine with Reflex to Fractionated	Effective November 13, 2017		
		Test Number Components Reference Interval		
			Arsenic, Urine -per volume	0.0-34.9 µg/L (based on Biological Exposure Index)
			Arsenic, Urine -per24h	0.0-49.9 µg/d
			Arsenic, Urine-ratio to CRT	0.0-29.9 ug/gCRT
		0020734	Arsenic, Fractionated, Urine	Refer to report
	Creatinine, Urine - per 24h	Refer to report		
0025040	Cadmium, Urine	Effective November 13, 2017		
		Test Number Components Reference Interval		
			Cadmium, Urine - per volume	0.0-1.0 µg/L
			Cadmium, Urine - per 24h	0.0-3.2 µg/d
			Cadmium, Urine - ratio to CRT	0.0-3.2 µg/g CRT
	Creatinine, Urine - per 24h	Refer to report		
0025060	Lead, Urine	Effective November 13, 2017		
		Test Number Components Reference Interval		
			Lead, Urine - per 24h	0.0-8.1 µg/d
			Lead, Urine - per volume	0.0-1.4 µg/L
			Lead Urine-ratio to CRT	0.0-1.4 ug/gCRT
	Creatinine, Urine - per 24h	Refer to report		
0025050	Mercury, Urine	Effective November 13, 2017		
		Test Number Components Reference Interval		
			Mercury, Urine - per 24h	0.0-2.9 µg/d
			Mercury, Urine - per volume	0.0-1.9 µg/L
			Mercury, Urine - ratio to CRT	0.0-20.0 µg/gCRT
	Creatinine, Urine - per 24h	Refer to report		

Interpretive Data: Urine cadmium levels can be used to assess cadmium body burden. In chronic exposures, the kidneys are the primary target organ. Symptoms associated with cadmium toxicity vary based upon route of exposure and may include tubular proteinuria, fever, headache, dyspnea, chest pain, conjunctivitis, rhinitis, sore throat and cough. Ingestion of cadmium in high concentration may cause vomiting, diarrhea, salivation, cramps, and abdominal pain.

Quantification of urine excretion rates before or after chelation therapy has been used as an indicator of lead exposure. Urinary excretion of >125 mg of lead per 24 hours is usually associated with related evidence of lead toxicity.

Urinary mercury levels predominantly reflect acute or chronic elemental or inorganic mercury exposure. Urine concentrations in unexposed individuals are typically less than 10 µg/L. 24 hour urine concentrations of 30 to 100 µg/L may be associated with subclinical neuropsychiatric symptoms and tremor while concentrations greater than 100 µg/L can be associated with overt neuropsychiatric disturbances and tremors. Urine mercury levels may be useful in monitoring chelation therapy.

The ACGIH Biological Exposure Index (BEI) for arsenic in urine is 35 µg/L. The ACGIH BEI is based on the sum of inorganic and methylated species. For specimens with a total arsenic concentration between 35-2000 µg/L, fractionation is automatically performed to determine the proportions of inorganic, methylated and organic species. It may be appropriate to request fractionation for specimens with a total arsenic greater than 30 µg/gCRT despite a total arsenic concentration less than 35 µg/L. If low-level chronic poisoning is suspected, the µg/gCRT ratio may be a more sensitive indicator of arsenic exposure than the total arsenic concentration.

See Compliance Statement B: www.aruplab.com/CS

HOTLINE NOTE: There is a numeric map change associated with this test.

Change the numeric map for component 0025062, Lead, Urine - per volume from XXXXX to **XXXXX.X**.

Change the numeric map for component 0025061, Lead, Urine - per 24h from XXXXX to **XXXXX.X**

Change the numeric map for component 0025051, Mercury, Urine - per 24h from XXX to **XXX.X**.

0025055

Heavy Metals Panel 6, Urine with Reflex to Arsenic Fractionated

HYMET 6

Reference Interval:

Test Number	Components	Reference Interval		
0025000	Arsenic, Urine with Reflex to Fractionated	Effective November 13, 2017		
		Test Number Components Reference Interval		
			Arsenic, Urine-per volume	0.0-34.9 µg/L (based on Biological Exposure Index)
			Arsenic, Urine-per24h	0.0-49.9 µg/d
			Arsenic, Urine-ratio to CRT	0.0-29.9 ug/gCRT
		0020734	Arsenic, Fractionated, Urine	Refer to report
	Creatinine, Urine - per 24h	Refer to report		
0025040	Cadmium, Urine	Effective November 13, 2017		
		Test Number Components Reference Interval		
			Cadmium, Urine - per volume	0.0-1.0 µg/L
			Cadmium, Urine - per 24h	0.0-3.2 µg/d
			Cadmium, Urine - ratio to CRT	0.0-3.2 µg/g CRT
	Creatinine, Urine - per 24h	Refer to report		
0020461	Copper, Urine	Effective November 13, 2017		
		Test Number Components Reference Interval		
			Copper, Urine-per volume	0.3-3.2 µg/dL
			Copper, Urine-per 24-h	3.0-45.0 µg/d
			Copper, Urine-ratio to CRT	10.0-45.0 µg/g CRT
	Creatinine, Urine - per 24h	Refer to report		
0025060	Lead, Urine	Effective November 13, 2017		
		Test Number Components Reference Interval		
			Lead, Urine - per 24h	0.0-8.1 µg/d
			Lead, Urine - per volume	0.0-1.4 µg/L
			Lead Urine-ratio to CRT	0.0-1.4 ug/gCRT
	Creatinine, Urine - per 24h	Refer to report		
0025050	Mercury, Urine	Effective November 13, 2017		
		Test Number Components Reference Interval		
			Mercury, Urine - per 24h	0.0-2.9 µg/d
			Mercury, Urine - per volume	0.0-1.9 µg/L
			Mercury, Urine - ratio to CRT	0.0-20.0 µg/gCRT
	Creatinine, Urine - per 24h	Refer to report		
0020462	Zinc, Urine	Effective November 13, 2017		
		Test Number Components Reference Interval		
			Zinc, Urine-per volume	15.0-120.0 µg/dL
			Zinc, Urine-per 24h	150.0-1200.0 µg/d
			Zinc, Urine-ratio to CRT	110.0-750.0 µg/gCRT
	Creatinine, Urine - per 24h	Refer to report		

HOTLINE NOTE: There is a numeric map change associated with this test.

- Change the numeric map for component 0020101, Copper, Urine - per 24h from XXXXXX to XXXXXX.X.
- Change the numeric map for component 0025062, Lead, Urine - per volume from XXXXX to XXXXX.X.
- Change the numeric map for component 0025061, Lead, Urine - per 24h from XXXXX to XXXXX.X
- Change the numeric map for component 0025051, Mercury, Urine - per 24h from XXX to XXX.X.
- Change the numeric map for component 0020102, Zinc, Urine - per volume from XXXXXX to XXXXXX.X.
- Change the numeric map for component 0020103, Zinc, Urine - per 24h from XXXXXX to XXXXXX.X.

2001567

Hepatitis B Virus Genotype by Sequencing

HBVGENO

Interpretive Data:

Both the HBV RT polymerase and the HBsAg encoding regions are sequenced. Resistance and surface antigen mutations are reported. In addition, the major HBV genotypes are identified. Mutations in viral sub-populations below 20 percent of total may not be **detected**.

See Compliance Statement B: www.aruplab.com/CS

2006898

Hepatitis C Virus High-Resolution Genotype by Sequencing

HCV CORE

Specimen Required: Collect: Lavender (EDTA), pink (K2EDTA), plasma preparation tube, or serum separator tube (SST).

Specimen Preparation: Separate serum or plasma from **cells**. **Transfer** 2 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 0.5 mL)

Storage/Transport Temperature: Frozen.

Remarks: Please submit most recent viral load and test date if available.

Unacceptable Conditions: Heparinized specimens.

Stability (collection to initiation of testing): **Ambient: Unacceptable; Refrigerated:** 72 hours; **Frozen:** 4 months

Interpretive Data:

Hepatitis C viral RNA is assayed using reverse transcription polymerase chain reaction (RT-PCR) to amplify specific portions of both the Core and NS5B regions of the viral genome. The amplified nucleic acid is sequenced bi-directionally using dye-terminator chemistry (ABI). Sequencing data is compared to a database of characterized sequences.

Isolates of hepatitis C virus are grouped into six major genotypes (1-6). These genotypes are subtyped according to sequence characteristics. Sequencing both the Core and NS5B regions allows for subtyping of all confirmed and most provisional genotypes, including differentiation of 1a from 1b and typing of genotype 6.

See Compliance Statement B: www.aruplab.com/CS

0050292

Herpes Simplex Virus Type 1 Glycoprotein G-Specific Antibody, IgG by CIA

HERP I

Specimen Required: Collect: Serum Separator Tube (SST).

Specimen Preparation: **Allow specimen to clot completely at room temperature.** Separate from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.5 mL)

Storage/Transport Temperature: Refrigerated.

Unacceptable Conditions: **Contaminated**, heat-inactivated, **grossly hemolyzed**, **lipemic** or severely icteric **specimens**.

Stability (collection to initiation of testing): After separation from cells: **Ambient:** 48 hours; **Refrigerated:** 2 weeks; **Frozen:** 1 year (Avoid repeated freeze/thaw cycles)

Note: For CSF specimens, refer to Herpes Simplex Virus Type 1 Glycoprotein G-Specific Antibody, IgG by ELISA, CSF (ARUP test code 0050379).

0050294

Herpes Simplex Virus Type 2 Glycoprotein G-Specific Antibody, IgG by CIA

HERP II

Specimen Required: Collect: Serum Separator Tube (SST).

Specimen Preparation: **Allow specimen to clot completely at room temperature.** Separate from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.5 mL)

Storage/Transport Temperature: Refrigerated.

Unacceptable Conditions: **Contaminated**, heat-inactivated, **grossly hemolyzed**, **lipemic**, or severely icteric **specimens**

Stability (collection to initiation of testing): After separation from cells: **Ambient:** 48 hours; **Refrigerated:** 2 weeks; **Frozen:** 1 year (Avoid repeated freeze/thaw cycles)

Note: For CSF specimens, refer to Herpes Simplex Virus Type 2 Glycoprotein G-Specific Antibody, IgG by ELISA, CSF (ARUP test code 0050359).

0060784

Human Metapneumovirus by PCR

HMPVPCR

Interpretive Data:

See Compliance Statement A: www.aruplab.com/CS

2002899

Human Papillomavirus (HPV), High Risk by in situ Hybridization, Paraffin

HPVHI ISH

Interpretive Data:

Refer to report.

See Compliance Statement A: www.aruplab.com/CS

HOTLINE NOTE: Remove information found in the Reference Interval field.

0070265

21-Hydroxylase Antibody

21-OH AB

Methodology: **Semi-Quantitative** Radioimmunoassay

Reference Interval: 0.0-1.0 U/mL

Interpretive Data: A value greater than 1.0 Kronus Units/mL is considered positive for 21-OH Antibody. Kronus units are arbitrary. Kronus Units = U/mL.

The 21-Hydroxylase Antibody Assay is intended for the semi-quantitative determination of antibodies to steroid 21-hydroxylase in human serum.

The presence of antibodies to 21-hydroxylase (greater than 1.0 U/mL) is indicative of primary adrenal insufficiency (Addison disease). Results should be interpreted in the context of clinical symptoms, including functional adrenal testing.

In males with adrenal insufficiency and 21-hydroxylase antibodies within the reference interval (less than 1.0 U/mL), X-Linked Adrenoleukodystrophy (X-ALD) should be excluded by using Very Long-Chain Branched Fatty Acids in plasma (ARUP Test Code 2004250) for screening.

0050202

IA-2 Antibody

IA-2

Methodology: **Semi-Quantitative** Radioimmunoassay

Interpretive Data: A value greater than 0.8 Kronus Units/mL is considered positive for IA-2 Antibody. Kronus units are arbitrary. Kronus Units = U/mL.

This assay is intended for the semi-quantitative determination of IA-2 antibodies to tyrosine phosphatase in human serum. Results should be interpreted within the context of clinical symptoms.

2008320

Infliximab and Infliximab-dyyb Activity and Neutralizing Antibody

IFX NAB

Specimen Required: Patient Prep: Collect specimens before infliximab treatment.

Collect: Serum separator tube.

Specimen Preparation: Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.5 mL)

Storage/Transport Temperature: Refrigerated.

Unacceptable Conditions: Contaminated, hemolyzed, icteric, or lipemic specimens.

Stability (collection to initiation of testing): After separation from cells: Ambient: 48 hours; Refrigerated: 4 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)

2013612

Infliximab and Infliximab-dyyb with Reflex to Antibody

IFX DL R

Specimen Required: Patient Prep: Collect specimens before infliximab treatment.

Collect: Serum Separator Tube (SST).

Specimen Preparation: Separate from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.5 mL)

Storage/Transport Temperature: Refrigerated.

Unacceptable Conditions: Contaminated, hemolyzed, icteric, or lipemic specimens.

Stability (collection to initiation of testing): After separation from cells: Ambient: 48 hours; Refrigerated: 4 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)

Reference Interval:

Available Separately	Components	Reference Interval
2013612	Infliximab and Infliximab-dyyb with Reflex to Antibody	Not Detected
No	Infliximab/Infliximab-dyyb Reflex to Neutralizing Antibody Confirmation	Not Detected

2007469 Influenza A Virus H1/H3 Subtype by PCR FLUTYPEPCR

Methodology: **Qualitative Polymerase** Chain Reaction

Interpretive Data:

This test targets the H3 and 2009-H1 hemagglutinin genes. The current circulating Influenza A strains are detected and typed (H1N1 and H3N2), however, other H1 and H3 subtypes may also be **detected**.

See Compliance Statement B: www.aruplab.com/CS

CPT Code(s): **87502**

HOTLINE NOTE: There is a component change associated with this test.
Change component 2007470, Influenza A Virus Subtype Source from resultable to prompt.

2008788 Influenza A Virus H1/H3 Subtype by PCR with Reflex to H1N1 (2009) FLUTYPE RE
Oseltamivir Resistance by Sequencing

Methodology: **Qualitative Polymerase** Chain Reaction/Pyrosequencing

Interpretive Data:

Refer to report.

See Compliance Statement B: www.aruplab.com/CS

HOTLINE NOTE: There is a component change associated with this test.
Change component 2007470, Influenza A Virus Subtype Source from resultable to prompt.

0099228 Insulin Antibody ANTI-INS

Methodology: **Semi-Quantitative** Radioimmunoassay

Interpretive Data: A value greater than 0.4 Kronus Units/mL is considered positive for Insulin Antibody. Kronus units are arbitrary.
Kronus Units = U/mL.

This assay is intended for the semi-quantitative determination of antibodies to endogenous insulin or antibodies to exogenous insulin in human serum. Antibodies to exogenous insulin therapies may be detected using this method. The magnitude of the measured result is not related to disease progression. Results should be interpreted within the context of clinical symptoms.

New Test **2007698** **Insulin-Like Growth Factor 1(IGF-1) with calculated Z-score** **IGF-1Z**

Methodology: Quantitative Chemiluminescent Immunoassay
Performed: Sun-Sat
Reported: 1-2 days

Specimen Required: Collect: Serum Separator Tube (SST).
 Specimen Preparation: Transport 1 mL serum in an ARUP Standard Transport Tube. (Min: 0.5 mL)
 Storage/Transport Temperature: Frozen.
 Unacceptable Conditions: Plasma, tissue, or urine. Grossly hemolyzed or lipemic specimens.
 Stability (collection to initiation of testing): After separation from cells: Ambient: 24 hours; Refrigerated: 1 week; Frozen: 1 year

Reference Interval:

AGE	MALE	FEMALE	AGE	MALE	FEMALE
0 year	11-100 ng/mL	8-131 ng/mL	43 years	78-233 ng/mL	71-258 ng/mL
1 year	12-120 ng/mL	9-146 ng/mL	44 years	76-230 ng/mL	69-253 ng/mL
2 years	13-143 ng/mL	11-165 ng/mL	45 years	74-227 ng/mL	66-249 ng/mL
3 years	14-169 ng/mL	13-187 ng/mL	46 years	72-225 ng/mL	64-246 ng/mL
4 years	15-200 ng/mL	15-216 ng/mL	47 years	71-224 ng/mL	62-243 ng/mL
5 years	16-233 ng/mL	19-251 ng/mL	48 years	69-224 ng/mL	60-240 ng/mL
6 years	17-269 ng/mL	24-293 ng/mL	49 years	68-225 ng/mL	59-238 ng/mL
7 years	18-307 ng/mL	30-342 ng/mL	50 years	67-225 ng/mL	57-236 ng/mL
8 years	20-347 ng/mL	39-396 ng/mL	51 years	66-225 ng/mL	55-235 ng/mL
9 years	23-386 ng/mL	49-451 ng/mL	52 years	65-222 ng/mL	53-234 ng/mL
10 years	29-424 ng/mL	62-504 ng/mL	53 years	64-218 ng/mL	52-233 ng/mL
11 years	37-459 ng/mL	76-549 ng/mL	54 years	62-214 ng/mL	51-233 ng/mL
12 years	49-487 ng/mL	90-581 ng/mL	55 years	61-210 ng/mL	49-234 ng/mL
13 years	64-508 ng/mL	104-596 ng/mL	56 years	59-206 ng/mL	48-235 ng/mL
14 years	83-519 ng/mL	115-591 ng/mL	57 years	58-204 ng/mL	47-236 ng/mL
15 years	102-520 ng/mL	121-564 ng/mL	58 years	56-203 ng/mL	46-238 ng/mL
16 years	119-511 ng/mL	122-524 ng/mL	59 years	55-203 ng/mL	44-240 ng/mL
17 years	131-490 ng/mL	120-479 ng/mL	60 years	53-206 ng/mL	43-241 ng/mL
18 years	137-461 ng/mL	117-436 ng/mL	61 years	51-209 ng/mL	41-243 ng/mL
19 years	137-428 ng/mL	113-399 ng/mL	62 years	49-214 ng/mL	40-244 ng/mL
20 years	133-395 ng/mL	109-372 ng/mL	63 years	46-219 ng/mL	38-244 ng/mL
21 years	127-364 ng/mL	107-351 ng/mL	64 years	43-225 ng/mL	36-244 ng/mL
22 years	120-338 ng/mL	105-337 ng/mL	65 years	40-231 ng/mL	34-241 ng/mL
23 years	112-316 ng/mL	103-326 ng/mL	66 years	37-236 ng/mL	32-238 ng/mL
24 years	105-298 ng/mL	102-317 ng/mL	67 years	34-240 ng/mL	30-235 ng/mL
25 years	99-283 ng/mL	100-311 ng/mL	68 years	31-243 ng/mL	28-231 ng/mL
26 years	94-271 ng/mL	98-305 ng/mL	69 years	29-245 ng/mL	27-228 ng/mL
27 years	90-262 ng/mL	96-301 ng/mL	70 years	27-246 ng/mL	26-226 ng/mL
28 years	87-255 ng/mL	93-297 ng/mL	71 years	26-245 ng/mL	24-224 ng/mL
29 years	84-250 ng/mL	91-293 ng/mL	72 years	25-242 ng/mL	24-222 ng/mL
30 years	83-246 ng/mL	89-290 ng/mL	73 years	24-236 ng/mL	23-221 ng/mL
31 years	82-244 ng/mL	87-286 ng/mL	74 years	23-229 ng/mL	22-220 ng/mL
32 years	82-243 ng/mL	85-283 ng/mL	75 years	22-221 ng/mL	21-218 ng/mL
33 years	82-242 ng/mL	83-280 ng/mL	76 years	22-212 ng/mL	20-216 ng/mL
34 years	82-242 ng/mL	82-279 ng/mL	77 years	21-204 ng/mL	20-214 ng/mL
35 years	83-241 ng/mL	81-278 ng/mL	78 years	20-196 ng/mL	19-210 ng/mL
36 years	83-240 ng/mL	80-277 ng/mL	79 years	19-189 ng/mL	18-206 ng/mL
37 years	83-239 ng/mL	80-277 ng/mL	80 years	18-184 ng/mL	18-200 ng/mL
38 years	83-238 ng/mL	79-276 ng/mL	81 years	17-180 ng/mL	18-193 ng/mL
39 years	83-238 ng/mL	78-274 ng/mL	82 years	16-177 ng/mL	17-186 ng/mL
40 years	82-237 ng/mL	76-271 ng/mL	83 years	16-176 ng/mL	17-179 ng/mL
41 years	81-236 ng/mL	75-267 ng/mL	84 years	16-176 ng/mL	17-173 ng/mL
42 years	80-235 ng/mL	73-263 ng/mL	85 years	15-177 ng/mL	17-167 ng/mL

Interpretive Data: A Z score is the number of standard deviations a given result is above (positive score) or below (negative score) the age- and sex-adjusted population mean. Results that are within the IGF-1 reference interval will have a Z score between -2.0 and +2.0.

Note: Both patient age and sex are required for Z score calculation.

CPT Code(s): 84305

New York DOH Approved.

HOTLINE NOTE: Refer to the Test Mix Addendum for interface build information.

2013993

Interstitial Lung Disease Panel

ILD PAN

Reference Interval:

Test Number	Components	Reference Interval			
		Test Number	Components	Reference Interval	
2012074	SSA 52 and 60 (Ro) (ENA) Antibodies, IgG		SSA 52 (Ro) (ENA) Antibody, IgG	29 AU/mL or Less: Negative 30-40 AU/mL: Equivocal 41 AU/mL or greater: Positive	
			SSA 60 (Ro) (ENA) Antibody, IgG	29 AU/mL or Less: Negative 30-40 AU/mL: Equivocal 41 AU/mL or greater: Positive	
		0050599	Scleroderma (Scl-70) (ENA) Antibody, IgG	29 AU/mL or less	Negative
				30-40 AU/mL	Equivocal
41 AU/mL or greater	Positive				
0099592	Jo-1 Antibody, IgG	29 AU/mL or less	Negative		
		30-40 AU/mL	Equivocal		
		41 AU/mL or greater	Positive		
	PL-7 (threonyl-tRNA synthetase) Antibody	Negative			
	PL-12 (alanyl-tRNA synthetase) Antibody	Negative			
	EJ (glycyl-tRNA synthetase) Antibody	Negative			
	Ku Antibody	Negative			
	SRP (Signal Recognition Particle) Ab	Negative			
	OJ (isoleucyl-tRNA synthetase) Antibody	Negative			
2003040	PM/Scl-100 Antibody, IgG by Immunoblot	Negative			
		MDA5 (CADM-140) Antibody			
		NXP-2 (Nuclear matrix protein-2) Ab			
0050465	Rheumatoid Factor	0-14 IU/mL			
0055256	Cyclic Citrullinated Peptide (CCP) Antibody, IgG	19 Units or less	Negative		
		20-39 Units	Weak positive		
		40-59 Units	Moderate positive		
		60 Units or Greater	Strong positive		
0050639	Nuclear Antibody (ANA) by IFA, IgG	Effective November 13, 2017 Less than 1:80			

2011482

Lead, Random Urine

U LEADRAND

Reference Interval:

Effective November 13, 2017

Components	Reference Interval
Lead, Urine - per volume	0.0-1.4 µg/L
Lead, Urine - ratio to CRT	0.0-1.4 µg/gCRT

Interpretive Data: Quantification of urine excretion rates before or after chelation therapy has been used as an indicator of lead exposure. Urinary excretion of >125 mg of lead per 24 hours is usually associated with related evidence of lead toxicity.

HOTLINE NOTE: There is a numeric map change associated with this test.
Change the numeric map for component 0025062, Lead, Urine - per volume from XXXXX to XXXXX.X.

Quarterly HOTLINE: Effective **November 13, 2017**

0025060

Lead, Urine

LEAD U

Reference Interval:

Effective **November 13, 2017**

Test Number	Components	Reference Interval		
	Lead, Urine - per 24h	0.0- 8.1 µg/d		
	Lead, Urine - per volume	0.0- 1.4 µg/L		
	Lead Urine-ratio to CRT	0.0-1.4 ug/gCRT		
	Creatinine, Urine – per 24h	Age	Male	Female
		3-8 years	140-700 mg/d	140-700 mg/d
		9-12 years	300-1300 mg/d	300-1300 mg/d
		13-17 years	500-2300 mg/d	400-1600 mg/d
		18-50 years	1000-2500 mg/d	700-1600 mg/d
		51-80 years	800-2100 mg/d	500-1400 mg/d
		81 years and older	600-2000 mg/d	400-1300 mg/d

Interpretive Data: Quantification of urine excretion rates before or after chelation therapy has been used as an indicator of lead exposure. Urinary excretion of >125 mg of lead per 24 hours is usually associated with related evidence of lead toxicity.

See Compliance Statement B: www.aruplab.com/CS

HOTLINE NOTE: There is a numeric map change associated with this test.

Change the numeric map for component 0025062, Lead, Urine - per volume from XXXXX to **XXXXX.X**.

Change the numeric map for component 0025061, Lead, Urine - per 24h from XXXXX to **XXXXX.X**

New Test

2014683

LeukoStrat CDx *FLT3* Mutation Detection by PCR

FLT3 CDX

Available Now



Additional Technical Information

Methodology: Qualitative Polymerase Chain Reaction/Capillary Electrophoresis

Performed: Varies

Reported: 3-5 days

Specimen Required: Collect: Green (Sodium or Lithium Heparin).

Specimen Preparation: Transport 5 mL whole blood. (Min: 5 mL) **OR** Transport 3 mL bone marrow. (Min: 3 mL) **Separate specimens must be submitted when multiple tests are ordered.**

Storage/Transport Temperature: Refrigerated.

Remarks: Specimen type required.

Unacceptable Conditions: Grossly hemolyzed or clotted specimens.

Stability (collection to initiation of testing): Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable

CPT Code(s): 81245; 81246

New York DOH Approved.

HOTLINE NOTE: Refer to the Test Mix Addendum for interface build information.

2013716

LipoFit by NMR

NMRLIPFIT

HOTLINE NOTE: There is a price change associated with this test. Please contact ARUP Client Services at (800) 522-2787 for additional information.

2013715

LipoFit by NMR, Particle Count Only

NMRLIPFITP

HOTLINE NOTE: There is a price change associated with this test. Please contact ARUP Client Services at (800) 522-2787 for additional information.

New Test [2014699](#) **Maternal T Cell Engraftment in SCID** **STR-SCID**

Methodology: Polymerase Chain Reaction/Fragment Analysis

Performed: Sun-Sat

Reported: 5-9 days

Specimen Required: Collect: Lavender (EDTA), Pink (K₂EDTA), Yellow (ACD Solution A), or buccal sample.

Specimen Preparation: Transport 3 mL whole blood. (Min: 3 mL) Increase the amount of blood submitted for patients with low cell counts.

Storage/Transport Temperature: Room temperature. Ship overnight. Specimens should be received within 24 hours of collection for optimal isolation of T cells.

Remarks: Please provide the results and date of the patient's most recent WBC and differential counts.

Unacceptable Conditions: Clotted or hemolyzed specimens.

Stability (collection to initiation of testing): Ambient: 48 hours; Refrigerated: 48 hours; Frozen: Unacceptable

Reference Interval:

Type Maternal	Maternal cells only.
Type Patient	Patient cells only.
Mixed	Patient and Maternal cells present. Semi-quantitative results of percentage of patient and maternal cells will be reported.

Interpretive Data:

Background Information for Maternal T Cell Engraftment in SCID:

Indication: Severe combined immunodeficiency (SCID) patients lack T cells and cannot recognize and reject maternal T cells from maternal-fetal transfusion. Maternal T cell can proliferate in the absence of host T cells leading to difficulty in determining the host T cell numbers required for the diagnosis of SCID and/or can cause graft-versus-host (GVHD) like presentation.

Methodology: PCR followed by capillary electrophoresis. Specimens are analyzed using 15 autosomal markers (D8S1179, D21S11, D7S820, CSF1PO, D3S1358, TH01, D13S317, D16S539, D2S1338, D19S433, vWa, TPOX, D18S51, D5S818, and FGA) and one gender marker (amelogenin).

Kit Used: AmpFLSTR Identifiler® PCR Amplification Kit, Applied Biosystems.

Limit of Detection: 2 percent of minor cell population.

See Compliance Statement B: www.aruplab.com/CS

Note: T cell genotypes will be compared to the patient's genotype obtained from a buccal sample and maternal genotypes. Therefore, patient peripheral blood and buccal sample and biological mother's specimens must be obtained and genotyped before the allogenic stem cell transplant event to treat SCID occurs. If T cell sorting is not completed before submission, BMT ISOL (2005498) will be added on to order.

CPT Code(s): 81268; If cell sorting is performed, add 88184

New York DOH approval pending. Call for status update.

HOTLINE NOTE: Refer to the Test Mix Addendum for interface build information.

Quarterly HOTLINE: Effective **November 13, 2017**

New Test [2014704](#) **Maternal T Cell Engraftment in SCID, Maternal Specimen** **SCID-MAT**

Methodology: Polymerase Chain Reaction/Fragment Analysis
Performed: Sun-Sat
Reported: 5-9 days

Specimen Required: Collect: Lavender (EDTA), Pink (K₂EDTA), or Yellow (ACD Solution A).
Specimen Preparation: Transport 3 mL whole blood. (Min: 1 mL)
Storage/Transport Temperature: Refrigerated.
Stability (collection to initiation of testing): Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable

Reference Interval: By report

Interpretive Data: Reported under STR-SCID.

Note: This sample serves as a genetic baseline for comparison to sorted T cell and maternal sample to determine if engraftment has occurred.

CPT Code(s): See CPT codes under Maternal T Cell Engraftment in SCID (ARUP test code 2014694)

New York DOH approval pending. Call for status update.

HOTLINE NOTE: Refer to the Test Mix Addendum for interface build information.

New Test [2014694](#) **Maternal T Cell Engraftment in SCID, Pre-Engraftment Specimen** **SCID-PRE**

Methodology: Polymerase Chain Reaction/Fragment Analysis
Performed: Sun-Sat
Reported: 5-9 days

Specimen Required: Collect: Buccal swab or buccal brush.
Specimen Preparation: Collect 3-4 swab/brush samples from patient and place in dry, sterile container for transport.
Storage/Transport Temperature: Room temperature.
Stability (collection to initiation of testing): Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable

Reference Interval: By report

Interpretive Data: Reported under STR-SCID

Note: This sample serves as a genetic baseline for comparison to sorted T cell and maternal sample to determine if engraftment has occurred.

CPT Code(s): 81265

New York DOH approval pending. Call for status update.

HOTLINE NOTE: Refer to the Test Mix Addendum for interface build information.

Quarterly HOTLINE: Effective **November 13, 2017**

0050380

Measles (Rubeola) Antibody, IgG

MEASLES G

Specimen Required: Collect: Serum Separator Tube (SST).

Specimen Preparation: **Allow specimen to clot completely at room temperature.** Separate from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.5 mL) Parallel testing is preferred and convalescent specimens **must** be received within 30 days from receipt of the acute specimens.

Storage/Transport Temperature: Refrigerated.

Remarks: **Label specimens plainly as “acute” or “convalescent.”**

Unacceptable Conditions: **Contaminated**, heat-inactivated, **grossly** hemolyzed, lipemic or severely icteric specimens.

Stability (collection to initiation of testing): After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (Avoid repeated freeze/thaw cycles)

Note: For CSF, refer to Measles (Rubeola) Antibody, IgG, CSF (ARUP test code 0054440).

0054440

Measles (Rubeola) Antibody, IgG, CSF

MEASLGCSF

Specimen Required: Collect: CSF.

Specimen Preparation: Transfer 0.5 mL CSF to an ARUP Standard Transport Tube. (Min: 0.3 mL)

Storage/Transport Temperature: Refrigerated. Also acceptable: Frozen.

Unacceptable Conditions: **Contaminated**, heat-inactivated, hemolyzed, or **xanthochromic** specimens.

Stability (collection to initiation of testing): Ambient: 8 hours; Refrigerated: 2 weeks; Frozen: 1 year

0098819

Melanocyte Stimulation Hormone, Alpha (a-MSH)

MSH ALPHA

Performed: Varies

Reported: 10-13 days

Specimen Required: Patient Prep: Patient should not be on any steroid, ACTH, or hypertension medication, if possible, for at least 48 hours prior to specimen collection. Morning fasting specimens are preferred.

Collect: Lavender (EDTA) or Pink (K₂EDTA).

Specimen Preparation: Separate from cells ASAP or within 2 hours of collection. Transfer 3 mL plasma to an ARUP Standard Transport Tube. (Min. 1 mL) Freeze immediately.

Storage/Transport Temperature: **CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered.**

Stability (collection to initiation of testing): Ambient: Unacceptable; Refrigerated: 24 hours; Frozen: **1 month**

2011481

Mercury, Random Urine

U MERCRAND

Reference Interval:

Effective **November 13, 2017**

Components	Reference Interval
Mercury, Urine - per volume	0.0-1.9 µg/L
Mercury, Urine - ratio to CRT	0.0-20.0 µg/gCRT

0025050

Mercury, Urine

MERCURY U

Reference Interval:

Effective **November 13, 2017**

Test Number	Components	Reference Interval		
	Mercury, Urine - per 24h	0.0-2.9 µg/d		
	Mercury, Urine - per volume	0.0-1.9 µg/L		
	Mercury, Urine - ratio to CRT	0.0-20.0 µg/gCRT		
	Creatinine, Urine – per 24h	Age	Male	Female
		3-8 years	140-700 mg/d	140-700 mg/d
		9-12 years	300-1300 mg/d	300-1300 mg/d
		13-17 years	500-2300 mg/d	400-1600 mg/d
		18-50 years	1000-2500 mg/d	700-1600 mg/d
		51-80 years	800-2100 mg/d	500-1400 mg/d
		81 years and older	600-2000 mg/d	400-1300 mg/d

HOTLINE NOTE: There is a numeric map change associated with this test.

Change the numeric map for component 0025051, Mercury, Urine - per 24h from XXX to XXX.X.

0054442

Mumps Virus Antibody IgG, CSF

MUMPSCSF

Specimen Required: Collect: CSF.

Specimen Preparation: Transfer 0.5 mL CSF to an ARUP Standard Transport Tube. (Min: 0.3 mL)

Storage/Transport Temperature: Refrigerated. Also acceptable: Frozen.

Unacceptable Conditions: Contaminated, heat-inactivated, hemolyzed, or xanthochromic specimens.

Stability (collection to initiation of testing): Ambient: 8 hours; Refrigerated: 2 weeks; Frozen 1 year

0050390

Mumps Virus Antibody, IgG

MUMPS

Specimen Required: Collect: Serum Separator Tube (SST).

Specimen Preparation: Allow specimen to clot completely at room temperature. Separate from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.5 mL) Parallel testing is preferred and convalescent specimens **must** be received within 30 days from receipt of acute specimens.

Storage/Transport Temperature: Refrigerated.

Remarks: Label specimens plainly as “acute” or “convalescent.”

Unacceptable Conditions: Contaminated, heat-inactivated, grossly hemolyzed, lipemic, or severely icteric specimens.

Stability (collection to initiation of testing): After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (Avoid repeated freeze/thaw cycles)

Note: For CSF, refer to Mumps Virus Antibody IgG, CSF (ARUP test code 0054442).

0060244

***Neisseria gonorrhoeae* by Transcription-Mediated Amplification (TMA)**

GCAMD

Specimen Required: Collect: **Endocervical**, vaginal, or male **urethral specimen** with APTIMA Unisex Swab Specimen Collection kit (ARUP supply #28907) available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787.
Also acceptable: First catch urine OR Cervical brush in ThinPrep Pap test collection kit.
Refer to "Sample Collection for the Diagnosis of STD" under Specimen Handling at www.aruplab.com for specific specimen collection and transport instructions.
Specimen Preparation: **Swab:** place blue swab in Swab Specimen Transport Tube, break shaft off at scoreline then recap tube.
Urine: Transfer 2 mL urine **within 24 hours** to APTIMA Urine Specimen Transport Tube (ARUP supply #28908) available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787. Liquid level must be between fill lines on tube.
ThinPrep: Vortex ThinPrep PreservCyt solution and transfer 1 mL to an APTIMA Specimen Transfer Tube (ARUP supply #42711). Available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787. To reduce the potential for contamination, ThinPrep specimens should be poured off, using sterile technique, into the APTIMA Specimen Transfer Tube prior to Cytology Testing.
Storage/Transport Temperature: Refrigerated.
Remarks: **Specimen source is required.**
Unacceptable Conditions: Large white swab included in APTIMA Unisex Swab Specimen Collection kit is for preparatory cleaning of the endocervix and is unacceptable for testing. Specimens in any transport media other than indicated above. Specimens in swab transport media without a swab.
Stability (collection to initiation of testing): **Swab:** Ambient: 2 months; Refrigerated: 2 months; Frozen: 1 year
APTIMA Urine Specimen Transport Tube: Ambient: 1 month; Refrigerated: 1 month; Frozen: 1 year
APTIMA Specimen Transfer Tube: Ambient: 2 weeks; Refrigerated: 1 month; Frozen: 1 year
ThinPrep: Ambient: 1 month; Refrigerated: 1 month; Frozen: Unacceptable

New Test [2014599](#) **Non-Alcoholic Fatty Liver Disease Susceptibility (*PNPLA3*) Genotyping** **PNPLA3**

Available Now



Additional Technical Information

Methodology: Polymerase Chain Reaction/Fluorescence Monitoring
Performed: Sun-Sat
Reported: 7-10 days

Specimen Required: Collect: Lavender (EDTA).
Specimen Preparation: Transport 3 mL whole blood. (Min: 1 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Plasma or serum. Specimens collected in sodium heparin or lithium heparin
Stability (collection to initiation of testing): Ambient: 72 hours; Refrigerated: 1 week; Frozen: unacceptable

Interpretive Data:

Background Information for Non-Alcoholic Fatty Liver Disease Susceptibility (*PNPLA3*) Genotyping:

Characteristics: Fatty liver disease is the accumulation of excessive triglycerides in the liver that may cause an inflammatory response, which can progress to fibrosis, cirrhosis, and liver cancer. The c.444C>G; p.I148M variant in the *PNPLA3* gene confers an increased risk for the onset and progression of non-alcoholic fatty liver disease (NAFLD). This allele also confers an increased risk for the onset and progression of cirrhosis among individuals with alcoholic liver disease.

Incidence: NAFLD occurs in approximately 20-30 percent of individuals in the US.

G Allele Frequency: Varies by ethnicity; Latino 0.57, East Asian 0.38, European 0.23, South Asian 0.22, Africans 0.14.

Cause: Risk factors for non-alcoholic fatty liver disease include obesity, diabetes, insulin resistance and genetic risk factors including *PNPLA3* c.444C>G; p.I148M.

Inheritance: Multifactorial.

Clinical Sensitivity: Unknown.

Variant Tested: *PNPLA3* c.444C>G; p.I148M (rs738409).

Methodology: Polymerase chain reaction followed by high-resolution melt analysis.

Analytical Sensitivity and Specificity: Greater than 99 percent.

Limitations: Only the c.444C>G; p.I148M variant in the *PNPLA3* gene will be targeted. Diagnostic errors can occur due to rare sequence variations.

See Compliance Statement C: www.aruplab.com/CS

CPT Code(s): 81479

New York DOH approval pending. Call for status update.

HOTLINE NOTE: Refer to the Test Mix Addendum for interface build information.

New Test [3000066](#) **NPM1 Mutation Detection by RT-PCR, Quantitative** **NPM1 QNT**



Time Sensitive



Additional Technical Information

Methodology: Quantitative Reverse-Transcription Polymerase Chain Reaction

Performed: **RNA isolation:** Sun-Sat

Assay: Mon, Wed-Fri

Reported: 5-7 days

Specimen Required: Collect: Lavender (EDTA) or Bone Marrow (EDTA).

Specimen Preparation: **Whole Blood:** Transport 5 mL whole blood. (Min: 1 mL)

Bone Marrow: Transport 3 mL bone marrow. (Min: 1 mL)

Specimens must be received within 48 hours of collection due to lability of RNA.

Storage/Transport Temperature: CRITICAL REFRIGERATED. Separate specimens must be submitted when multiple tests are ordered.

Unacceptable Conditions: Serum, plasma, or FFPE tissue. Specimens collected in anticoagulants other than EDTA. Severely hemolyzed or clotted specimens.

Stability (collection to initiation of testing): Ambient: 1 hour; Refrigerated: 48 hours; Frozen: Unacceptable

Interpretive Data: Refer to report.

See Compliance Statement B: www.aruplab.com/CS

CPT Code(s): 81310

New York DOH approval pending. Call for status update.

HOTLINE NOTE: Refer to the Test Mix Addendum for interface build information.

[0050639](#) **Nuclear Antibody (ANA) by IFA, IgG** **ANA-IFA**

Reference Interval:

Effective **November 13, 2017**

Less than 1:80

Interpretive Data: Presence of antinuclear antibodies (ANA) is a hallmark feature of systemic autoimmune rheumatic diseases (SARD). ANA lacks diagnostic specificity, and is associated with in variety diseases (cancers, autoimmune, infectious, and inflammatory conditions) occurs in healthy individuals in varying prevalence. The lack of diagnostic specificity requires confirmation of positive ANA by more-specific serologic tests, which may be guided by the pattern(s) observed.

Negative results do not necessarily rule out SARD.

Note: ANA are determined by indirect fluorescence assay (IFA) using HEp-2 substrate and IgG-specific conjugate at a screening dilution of 1:80. If positive, patterns reported include homogeneous, speckled, centromere, nucleolar, nuclear dots, or cytoplasmic. All positive results are reported with endpoint titers.

[2002257](#) **Osmotic Fragility, Erythrocyte** **OSM FRG**

Specimen Required: Collect: Green (Sodium or Lithium Heparin) or Lavender (EDTA).

Specimen Preparation: Transport 2 unfixed, air-dried, and unstained smears. (Min: 2 smears made from the blood submitted) AND 5 mL whole blood. (Min: 1 mL) Specimens should be refrigerated within 30 minutes after collection. Place both slides and whole blood specimens in an osmotic fragility transport kit (ARUP supply #53821) available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787.

Storage/Transport Temperature: Refrigerated.

Unacceptable Conditions: Grossly hemolyzed specimens.

Stability (collection to initiation of testing): Ambient: Unacceptable; Refrigerated: 72 hours; Frozen: Unacceptable

Quarterly HOTLINE: Effective **November 13, 2017**

0049250

p53 with Interpretation by Immunohistochemistry

P53 IP

HOTLINE NOTE: Remove information found in the Reference Interval field.

2006247

Parainfluenza 1-4 by PCR

PARAFLUPCR

Interpretive Data:

See Compliance Statement B: www.aruplab.com/CS

2005731

Parechovirus by PCR

PEHV PCR

Methodology: Qualitative Polymerase Chain Reaction

Interpretive Data:

See Compliance Statement B: www.aruplab.com/CS

0020159

Pseudocholinesterase, Dibucaine Inhibition

PCHE PHENO

Reference Interval:

Effective **November 13, 2017**

Test Number	Components	Reference Interval
0020167	Pseudocholinesterase, Total	2,900-7,100 U/L

Note: Patients with acute or chronic liver disease, organophosphate poisoning, chronic renal disease, in late stages of pregnancy, or on estrogen therapy may have markedly decreased PChE activities.

HOTLINE NOTE: There is a component change associated with this test.
Remove component 0020157, PChE Presumptive Phenotype

New Test **3000010** **Relapsing Fever *Borrelia* Species by PCR** **RFBPCR**

Methodology: Qualitative Polymerase Chain Reaction
Performed: Sun-Sat
Reported: 1-3 days

Specimen Required: Collect: Lavender (EDTA) or Pink (K₂EDTA).
Specimen Preparation: Transport 1 mL whole blood. (Min: 0.5 mL)
Storage/Transport Temperature: Refrigerated.
Remarks: Specimen source required.
Unacceptable Conditions: Heparinized specimens.
Stability (collection to initiation of testing): Ambient: 24 hours; Refrigerated: 5 days; Frozen: 1 week

Interpretive Data:
 See Compliance Statement B: www.aruplab.com/CS

Note: This test is designed to detect but not differentiate the nucleic acid from *B. hermsii*, *B. miyamotoi*, *B. parkeri*, and *B. turicatae*. Additional less-frequently encountered relapsing fever *Borrelia* species may also be detected, including *B. coriaceae*, *B. theileri*, *B. lonestari*, and *B. anserina*. A result of "Detected" indicates the presence of nucleic acid from any one of these species in the specimen.

CPT Code(s): 87798

New York DOH approval pending. Call for status update.

HOTLINE NOTE: Refer to the Test Mix Addendum for interface build information.

0070105 **Renin Activity** **RENIN**

Performed: Sun-Sat
Reported: 1-3 days

0051298 **Rheumatoid Factors, IgA, IgG, and IgM by ELISA** **RF PAN**

Methodology: Semi-Quantitative Enzyme-Linked Immunosorbent Assay.

CPT Code(s): 83516 x3

2008414 **ROS1 with Interpretation by Immunohistochemistry with Reflex to FISH if Equivocal or Positive** **ROS1 IP**

Note: If ROS1 by Immunohistochemistry result is equivocal or positive, then ROS1 by FISH will be added. Additional charges apply.

0050771 **Rubella Antibody, IgG** **RUBEIGG**

Specimen Required: Collect: Serum Separator Tube (SST).
Specimen Preparation: Allow specimen to clot completely at room temperature. Separate from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.5 mL) Parallel testing is preferred and convalescent specimens **must** be received within 30 days from receipt of the acute specimens.
Storage/Transport Temperature: Refrigerated.
Remarks: **Label specimens plainly as "acute" or "convalescent."**
Unacceptable Conditions: Contaminated, heat-inactivated, or grossly hemolyzed specimens.
Stability (collection to initiation of testing): After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (Avoid repeated freeze/thaw cycles)

0050551

Rubella Antibody, IgM

RUBEIGM

Specimen Required: Collect: Serum Separator Tube (SST).

Specimen Preparation: Allow specimen to clot completely at room temperature. Separate from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.5 mL) Parallel testing is preferred and convalescent specimens **must** be received within 30 days from receipt of acute specimens.

Storage/Transport Temperature: Refrigerated.

Remarks: **Label specimens plainly as "acute" or "convalescent."**

Unacceptable Conditions: Contaminated, heat-inactivated, or grossly hemolyzed specimens.

Stability (collection to initiation of testing): After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (Avoid repeated freeze/thaw cycles)

2006258

Sexually Transmitted Disease Panel 1 by Transcription-Mediated Amplification

STD PANEL1

Specimen Required: Collect: Vaginal or endocervical swab in APTIMA Unisex Swab Specimen Collection kit (ARUP supply #28907) available online through eSupply using ARUP Connect™ or contact Client Services at (800) 522-2787.

Also acceptable: Cervical brush in ThinPrep Pap test collection kit.

Refer to "Sample Collection for the Diagnosis of STD" under Specimen Handling at www.aruplab.com for specific specimen collection and transport instructions.

Specimen Preparation: **Swab:** Place blue swab in Swab Specimen Transport Tube, break shaft off at scoreline then recap tube.

ThinPrep: Vortex ThinPrep PreservCyt solution and transfer 1 mL to an APTIMA Specimen Transfer Tube (ARUP supply #42711) available online through eSupply using ARUP Connect™ or contact Client Services at (800) 522-2787.

Storage/Transport Temperature: Refrigerated.

Remarks: **Specimen source is required.**

Unacceptable Conditions: Large white swab included in APTIMA Unisex Swab Specimen Collection kit is for preparatory cleaning of the endocervix and is unacceptable for testing. Specimens in any transport media other than indicated above. Specimen in swab transport media without a swab. Specimens from patients that are less than 14 years of age.

Stability (collection to initiation of testing): **Swab:** Ambient: 2 months; Refrigerated: 2 months; Frozen: 1 year

APTIMA Specimen Transfer Tube: Ambient: 2 weeks; Refrigerated: 1 month; Frozen: 1 year

ThinPrep: Ambient: 1 month; Refrigerated: 1 month; Frozen: Unacceptable

2013325

Systemic Sclerosis Comprehensive Panel

SCL COMP

Reference Interval:

Test Number	Components	Reference Interval	
0050599	Scleroderma (Scl-70) (ENA) Antibody, IgG	29 AU/mL or less	Negative
		30-40 AU/mL	Equivocal
		41 AU/mL or greater	Positive
0050470	RNP (U1) (Ribonucleic Protein) (ENA) Antibody, IgG	29 AU/mL or less	Negative
		30-40 AU/mL	Equivocal
		41 AU/mL or greater	Positive
0050639	Nuclear Antibody (ANA) by IFA, IgG	Effective November 13, 2017 Less than 1:80	
2012173	Fibrillarin (U3 RNP) Antibody, IgG	Negative	
2003040	PM/Scl-100 Antibody, IgG by Immunoblot	Negative	
2001601	RNA Polymerase III Antibody, IgG	19 Units or less	Negative
		20-39 Units	Weak Positive
		40-80 Units	Moderate Positive
		81 Units or greater	Strong Positive

2012057

Systemic Sclerosis Panel

SSC PAN

Reference Interval:

Test Number	Components	Reference Interval	
0050639	Nuclear Antibody (ANA) by IFA, IgG	Effective November 13, 2017 Less than 1:80	
0050599	Scleroderma (Scl-70) (ENA) Antibody, IgG	29 AU/mL or less	Negative
		30-40 AU/mL	Equivocal
		41 AU/mL or greater	Positive
2001601	RNA Polymerase III Antibody, IgG	19 Units or less	Negative
		20-39 Units	Weak Positive
		40-80 Units	Moderate Positive
		81 Units or greater	Strong Positive

2014484

Thiopurine Metabolites by LC-MS/MS

THIOPMETAB

CPT Code(s): 80299

2002734

Thyroid Stimulating Hormone Receptor Antibody (TRAb)

TR AB

HOTLINE NOTE: Remove information found in the Interpretive Data field.

0099430

Thyroid Stimulating Immunoglobulin

TSI

Methodology: Semi-Quantitative Bioassay/Quantitative Chemiluminescent Immunoassay

0050770

***Toxoplasma gondii* Antibody, IgG**

TOXEIGG

Specimen Required: Collect: Serum Separator Tube (SST).

Specimen Preparation: Allow specimen to clot completely at room temperature. Separate from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.5 mL) Parallel testing is preferred and convalescent specimens **must** be received within 30 days from receipt of the acute specimens.

Storage/Transport Temperature: Refrigerated.

Remarks: Label specimens plainly as "acute" or "convalescent."

Unacceptable Conditions: Contaminated, heat-inactivated, or grossly hemolyzed specimens.

Stability (collection to initiation of testing): After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (Avoid repeated freeze/thaw cycles)

0050557

***Toxoplasma gondii* Antibody, IgM**

TOXEIGM

Specimen Required: Collect: Serum Separator Tube (SST).

Specimen Preparation: Allow specimen to clot completely at room temperature. Separate from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.5 mL) Parallel testing is preferred and convalescent specimens **must** be received within 30 days from receipt of the acute specimens.

Storage/Transport Temperature: Refrigerated.

Remarks: Label specimens plainly as "acute" or "convalescent."

Unacceptable Conditions: Contaminated, heat-inactivated, or grossly hemolyzed specimens.

Stability (collection to initiation of testing): After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (Avoid repeated freeze/thaw cycles)

New Test [2014686](#) **Tramadol and Metabolite, Quantitative, Serum or Plasma** **TRAMADOL**
 Available Now

Methodology: Quantitative High Performance Liquid Chromatography-Tandem Mass Spectrometry
Performed: Varies
Reported: 3-10 days

Specimen Required: Collect: Plain Red, Lavender (EDTA), or Pink (K₂EDTA).
Specimen Preparation: Separate from cells ASAP or within 2 hours of collection. Transfer 1 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 0.45 mL)
Storage/Transport Temperature: Refrigerated. Also acceptable: Room temperature or frozen.
Unacceptable Conditions: Separator tubes.
Stability (collection to initiation of testing): Ambient: 2 weeks; Refrigerated: 2 weeks; Frozen: 11 months

Reference Interval: By report

Interpretive Data: Refer to report

Note: Peak serum levels are recommended when monitoring patients because the level in the blood drops so rapidly that many negative results are found at the trough. The peak occurs at 40 to 90 minutes post dose.

CPT Code(s): 80373 (Alt code: G0480)

New York DOH Approved.

HOTLINE NOTE: Refer to the Test Mix Addendum for interface build information.

[2002736](#) **Tramadol and Metabolite, Urine, Quantitative** **TRAMAD UR**

Reference Interval:
 Effective November 13, 2017

Drugs Covered	Cutoff Concentrations
Tramadol	50 ng/mL
O-desmethyiltramadol (qualitative only)	100 ng/mL

Interpretive Data:

Methodology: Quantitative Liquid Chromatography-Tandem Mass Spectrometry

Positive cutoff:

Tramadol: 50 ng/mL
 o-desmethyiltramadol: 100 ng/mL

For medical purposes only; not valid for forensic use.

The presence of metabolite(s) without parent drug is common and may indicate use of parent drug during the prior week.

The absence of expected drug(s) and/or drug metabolite(s) may indicate non-compliance, inappropriate timing of specimen collection relative to drug administration, poor drug absorption, diluted/adulterated urine, or limitations of testing. The concentration value must be greater than or equal to the cutoff to be reported as positive. Interpretive questions should be directed to the laboratory.
 See Compliance Statement B: www.aruplab.com/CS

HOTLINE NOTE: There is a component change associated with this test.
 Remove component 2002737, N-desmethyiltramadol, Urn, Qual

2005506

Trichomonas vaginalis by Transcription-Mediated Amplification (TMA)

TVAG AMD

Specimen Required: Collect: Vaginal **or endocervical swab** in APTIMA Unisex Swab Specimen Collection kit (ARUP supply #28907) available online through eSupply using ARUP Connect™ or contact Client Services at (800) 522-2787.

Also acceptable: Cervical brush in ThinPrep Pap test collection kit.

Refer to "Sample Collection for the Diagnosis of STD" under Specimen Handling at www.aruplab.com for specific specimen collection and transport instructions.

Specimen Preparation: **Swab:** place blue swab in Swab Specimen Transport Tube, break shaft off at scoreline then recap **tube**.

ThinPrep: Vortex ThinPrep PreservCyt solution and transfer 1 mL to an APTIMA Specimen Transfer Tube (ARUP supply #42711) available online through eSupply using ARUP Connector contact Client Services at (800) 522-2787.

Storage/Transport Temperature: Refrigerated.

Remarks: **Specimen source required.**

Unacceptable Conditions: Large white swab included in APTIMA Unisex Swab Specimen Collection kit is for preparatory cleaning of the endocervix and is unacceptable for testing. Specimens in any transport media other than indicated above. Specimen in swab transport media without a swab. Specimens from patients that are less than 14 years of age.

Stability (collection to initiation of testing): **Swab:** Ambient: 2 months; Refrigerated: 2 months; Frozen: 1 year

APTIMA Specimen Transfer Tube: Ambient: 2 weeks; Refrigerated: 1 month; Frozen: 1 year

ThinPrep: Ambient: 1 month; Refrigerated: 1 month; Frozen: Unacceptable

0050167

Varicella-Zoster Virus Antibody, IgG

VZE

Specimen Required: Collect: Serum Separator Tube (SST).

Specimen Preparation: **Allow specimen to clot completely at room temperature.** Separate from cells ASAP or within 2 hours of collection. Transfer 1 mL serum in an ARUP Standard Transport Tube. (Min: 0.5 mL) Parallel testing is preferred and convalescent specimens **must** be received within 30 days from receipt of the acute specimens.

Storage/Transport Temperature: Refrigerated.

Remarks: **Label specimens plainly as "acute" or "convalescent."**

Unacceptable Conditions: **Contaminated**, heat-inactivated, **grossly** hemolyzed, lipemic, or severely icteric specimens.

Stability (collection to initiation of testing): After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (Avoid repeated freeze/thaw cycles)

Note: For CSF specimens, refer to Varicella-Zoster Virus Antibody, IgG, CSF (ARUP test code 0054444).

0054444

Varicella-Zoster Virus Antibody, IgG, CSF

VZECSF

Specimen Required: Collect: CSF.

Specimen Preparation: Transfer 0.5 mL CSF to an ARUP Standard Transport Tube. (Min: 0.3 mL)

Storage/Transport Temperature: Refrigerated. Also acceptable: Frozen.

Unacceptable Conditions: **Contaminated**, heat-inactivated, hemolyzed, **or xanthochromic** specimens.

Stability (collection to initiation of testing): Ambient: 8 hours; Refrigerated: 2 weeks; Frozen: 1 year

0050229

West Nile Virus by PCR

WNILE PCR

Methodology: Qualitative Polymerase Chain Reaction

Interpretive Data:

See Compliance Statement B: www.aruplab.com/CS

2006196

Zinc Transporter 8 Antibody

ZNT8 AB

Interpretive Data: A value greater than 15.0 Kronus Units/mL is considered positive for the Zinc Transporter 8 Antibody (ZnT8). Kronus units are arbitrary. Kronus Units = U/mL. **This assay is intended for the semi-quantitative determination of antibodies to ZnT8 in human serum. Results should be interpreted within the context of clinical symptoms.**

0020462

Zinc, Urine

ZINC U

Reference Interval:

Effective **November 13, 2017**

Test Number	Components	Reference Interval		
	Zinc, Urine-per volume	15.0-120.0 µg/dL		
	Zinc, Urine-per 24h	150.0-1200.0 µg/d		
	Zinc, Urine-ratio to CRT	110.0-750.0 µg/gCRT		
	Creatinine, Urine - per 24h	Age	Male	Female
		3-8 years	140-700 mg/d	140-700 mg/d
		9-12 years	300-1300 mg/d	300-1300 mg/d
		13-17 years	500-2300 mg/d	400-1600 mg/d
		18-50 years	1000-2500 mg/d	700-1600 mg/d
		51-80 years	800-2100 mg/d	500-1400 mg/d
		81 years and older	600-2000 mg/d	400-1300 mg/d

HOTLINE NOTE: There is a numeric map change associated with this test.

Change the numeric map for component 0020102, Zinc, Urine - per volume from XXXXXX to **XXXXXX.X**.

Change the numeric map for component 0020103, Zinc, Urine - per 24h from XXXXXX to **XXXXXX.X**.

Quarterly HOTLINE: Effective **November 13, 2017**

**The following will be discontinued from ARUP's test menu on November 13, 2017.
Replacement test options are supplied if applicable.**

Test Number	Test Name	Refer To Replacement
0050710	Coccidioides Antibodies Panel, CSF by CF, ID, ELISA	
2005400	<i>FLT3</i> Mutation Detection by PCR	LeukoStrat CDx <i>FLT3</i> Mutation Detection by PCR (2014683)
2011806	<i>FLT3</i> Signal Ratio Mutation Detection by PCR	LeukoStrat CDx <i>FLT3</i> Mutation Detection by PCR (2014683)
0070125	IGF-1 (Insulin-Like Growth Factor 1)	Insulin-Like Growth Factor 1(IGF-1) with calculated Z-score (2007698)
0091180	Ipecac Use Markers, Serum or Plasma - Screen with Reflex to Confirmation/Quantitation	
0091419	Ipecac Use Markers, Urine - Screen with Reflex to Confirmation/Quantitation	
0091553	Methane, Whole Blood	
0040174	<i>NPM1</i> Mutation by PCR and Fragment Analysis	
0091455	Phenylpropanolamine, Serum or Plasma	
0091454	Phenylpropanolamine, Urine	
2002764	Tramadol and Metabolites, Serum or Plasma, Quantitative	Tramadol and Metabolite, Quantitative, Serum or Plasma (2014686)
0050787	Trichinella Antibody, IgG, by ELISA	